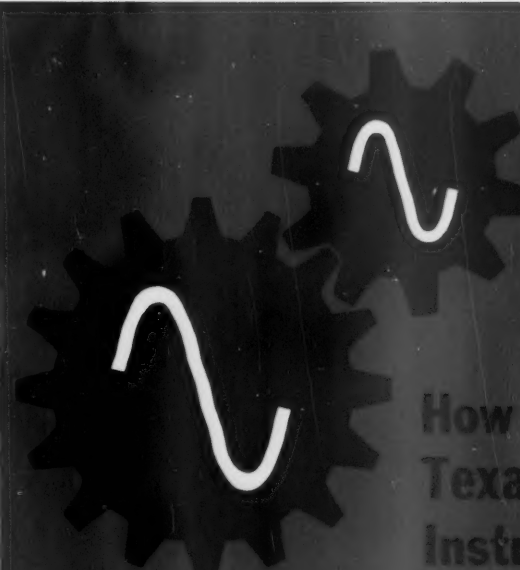


MARCH 27, 1961

# PURCHASING

The Methods and News Magazine for Industrial Buyers



**How  
Texas  
Instruments  
Buys**

**Project Purchasing—Materials Control—  
Work Simplification**

**p. 70**

**The Pulse  
Of Business**  
p. 7

**IDP Cuts Days  
Off Order Cycle**  
p. 84

**P.A.'s Go  
Back to School**  
p. 82

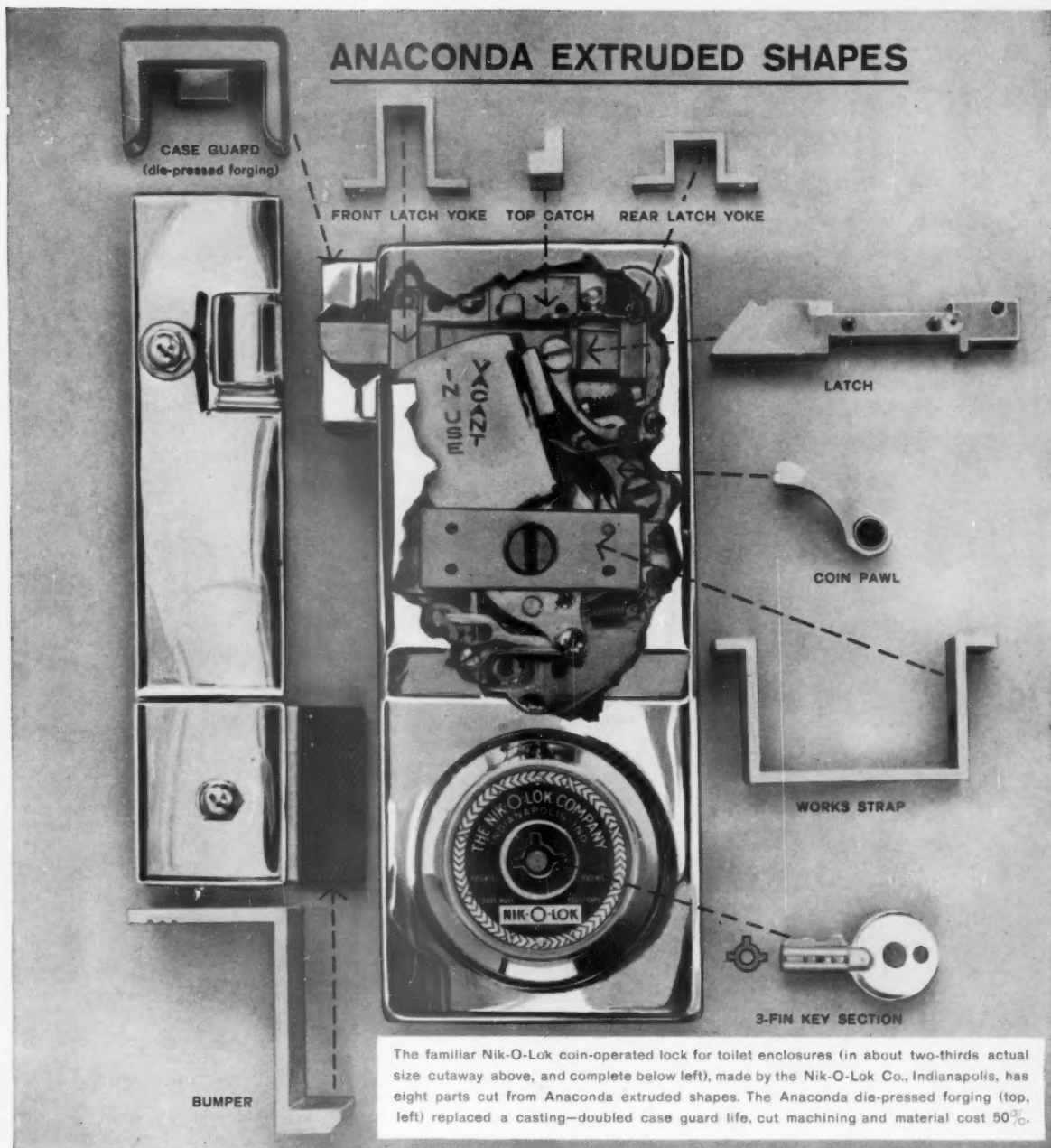
**Reward Vendors  
For New Ideas?**  
p. 79

TABLE OF CONTENTS...PAGE 5

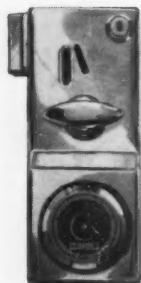
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SEVENTY-FIVE CENTS

## ANACONDA EXTRUDED SHAPES



The familiar Nik-O-Lok coin-operated lock for toilet enclosures (in about two-thirds actual size cutaway above, and complete below left), made by the Nik-O-Lok Co., Indianapolis, has eight parts cut from Anaconda extruded shapes. The Anaconda die-pressed forging (top, left) replaced a casting—doubled case guard life, cut machining and material cost 50%.



### How parts sliced from long lengths of "premachined" brass shapes cut costs.

It starts in design. You select cross sections which minimize subsequent machining—and scrap. The only limitation is that grooves, slots, etc., must parallel the axis of the extruded bar. The smooth surface of extruded shapes reduces many finishing operations. And high dimensional accuracy simplifies assembly. In addition, you get superior, long-wearing parts that improve the quality of your product, because of the strong, homogeneous wrought-metal structure of extruded shapes. For imaginative and practical help in adapting extruded shapes to the economical production of intricate parts, see your Anaconda representative. Or write: Anaconda American Brass Company, Waterbury 20, Connecticut. In Canada: Anaconda American Brass Ltd., New Toronto, Ontario.

6143 **ANACONDA®**

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For More Facts About Ad on Facing Page Write in No. 154→





## CENTURY MOTORS PULL HEAT OUT OF 42-STORY BUILDING

Forty-two stories above Dallas, on top of the South's tallest building, three Century 50 horsepower motors are driving induced draft fans to keep the Southland Center cool.

Heat absorbed by air conditioning and refrigeration systems must be returned to the atmosphere as efficiently as possible. Increasing industrial, commercial and domestic water consumption makes it necessary to use systems which recirculate and conserve the cooling

water. This cooling tower is part of such a system.

Continuous driving of three huge multi-blade fans is necessary to the operation of this three-cell tower. The Century motors are subject to all sorts of weather—heat, moisture, rain, wind, corrosion. But they keep working—continuously. Century application engineers understand such requirements—call your Century District Office or Authorized Distributor.

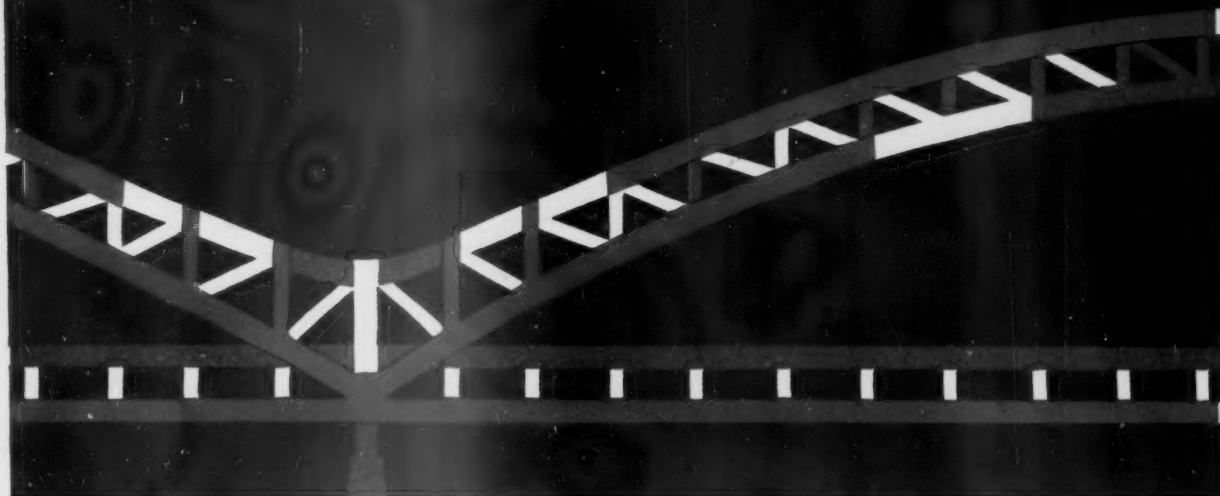
### CENTURY ELECTRIC COMPANY

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## design steels used for efficiency and



Sketch of one span of the two-span bridge showing where it was most efficient to take advantage of the high yield strength provided by steels such as USS "T-1" Steel (in red), USS TRI-TEN High-Strength Low-Alloy Steel (in white), A7 and A373 Structural Carbon Steel (in gray). Louisville-New Albany Bridge

The new double-deck, two-span, tied-arch bridge spanning the Ohio River between Louisville, Kentucky, and New Albany, Indiana, should be extremely interesting to bridge designers and engineers.

Designed by the consulting firm of Hazelet & Erdal, this bridge is another fine example of the application of heat-treated constructional alloy steel, high-strength low-alloy and structural carbon steels to provide the desired strength at the least weight and lowest cost. A total of 7,641 tons of steel were used in the two 800-foot spans and the approaches.

Because much of this bridge was shop welded, the excellent welding properties of USS Design Steels played an important part in their selection. The weldable, constructional alloy USS "T-1" and high strength TRI-TEN Steels both permitted the design engineers to obtain considerable savings in the amount of steel needed, resulting in a substantial reduction in the total cost of

the structure. The saving in steel tonnage reduced dead weight enough to effect still further savings by reduced loads on individual truss members, piers, and foundations.

All of the tie and most of the highly stressed upper and lower chords and some verticals were made of 100,000 psi yield strength heat-treated constructional alloy steel. Approximately 1,500 tons of USS "T-1" Constructional Alloy Steel were used.

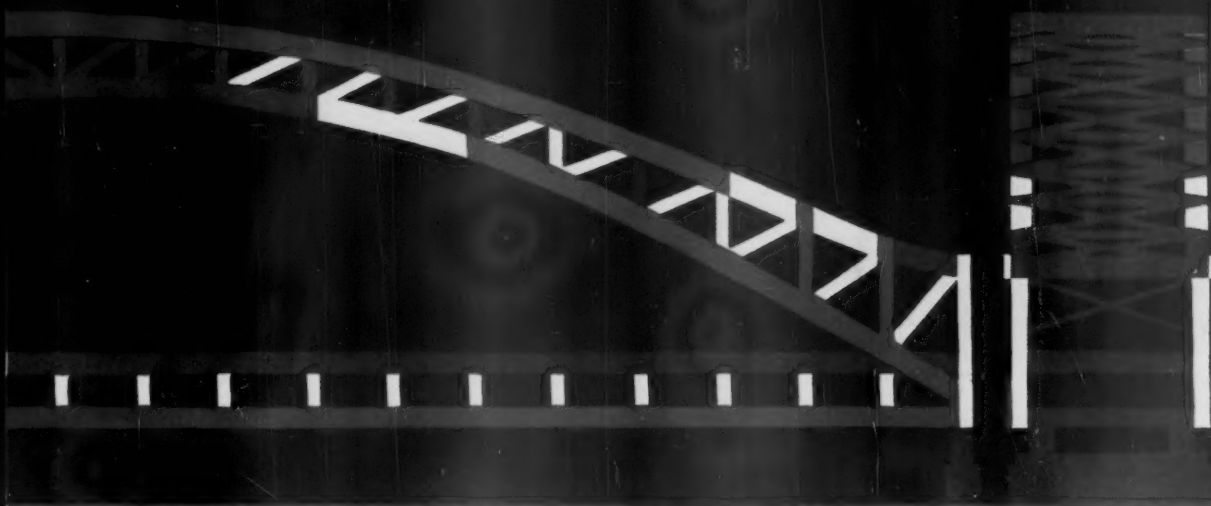
Most of the diagonals, some of the top and bottom chords and approach trusses called for 50,000 psi high-strength low-alloy ASTM A242 steel. USS TRI-TEN Steel—1,535 tons of it—was used for these applications. (USS TRI-TEN Steel can also meet specification ASTM A441.)

United States Steel also furnished 1,100 tons of ASTM A373 and 1,550 tons of ASTM A7 structural carbon steel, used in the lesser stressed members of the bridge and approaches.



This mark tells you a product is made of modern, dependable Steel

# economy in Louisville-New Albany Bridge



was designed by Hazelet & Erdal, Consulting Engineers, Louisville, Kentucky, for the State Highway Department of Indiana and Kentucky Department of Highways. Fabricator: The R. C. Mahon Co., Detroit, Michigan. Erector: John F. Beasley Construction Co., Dallas, Texas (Sub-contractor to Mahon).

Two other USS High Strength Steels have been widely used for bridges—USS MAN-TEN ASTM A440 and USS COR-TEN Steels. Both have a 50,000 psi minimum yield point. USS COR-TEN Steel offers outstanding resistance to atmospheric corrosion and superior paint adherence qualities. It is a natural choice for riveted structures in corrosive areas. USS MAN-TEN ASTM A440 Steel is the lowest priced of our High Strength Steels and is generally used for riveted structures. Recently introduced, USS "T-1" Type A Steel is the newest member of our famous family of constructional alloy steels and offers, at the same strength level as "T-1" Steel, a more economical grade for applications 1" thick and under. For more information on any of these USS Design Steels, write United States Steel, 525 William Penn Place, Pittsburgh 30, Pennsylvania.

*USS, "T-1", COR-TEN, TRI-TEN and MAN-TEN are registered trademarks*

## USS Steels for bridge design

	PSI Min. yield
Structural Carbon Steel (A373).....	32,000
Structural Carbon Steel (A7).....	33,000
Structural Carbon Steel (A36).....	36,000
USS COR-TEN High Strength Steel.....	50,000
USS MAN-TEN (A440) High Strength Steel.....	50,000
USS TRI-TEN (A441) High Strength Steel.....	50,000
USS "T-1" Constructional Alloy Steel.....	100,000

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## How Texas Instruments Buys ..... 70

Electronics is a fast-moving, diversified, and roughly competitive business. A purchasing program geared to these conditions has helped keep Texas Instruments in a top spot in its field. Outstanding features of the flexible, but tightly organized system: buying by project; purchasing-engineering teamwork; close control of materials; simplified, cost-cutting purchasing procedures.

## Reward Suppliers for New Ideas ..... 79

The P.A. has a difficult problem when a supplier comes up with a cost reduction idea and another vendor moves in and offers to copy the idea at a lower price. But there is a mathematical formula which will help the purchasing executive make a just decision.

## Forms Forum ..... 80

Details of how the "single writing" method works and the forms one company uses with this system.

## New Look in Purchasing Education ..... 82

Purchasing executives go back to school to take a four-year course in materials management.

## IDP Cuts Days From the Purchasing Cycle ..... 84

Purchasing for a company that makes large, complex individually engineered units involves a lot of detail work. By using integrated data processing, one company has been able to simplify the job.

## Recent Decisions in Purchasing Law ..... 87

A quick rundown on recent court decisions of special interest to purchasing executives.

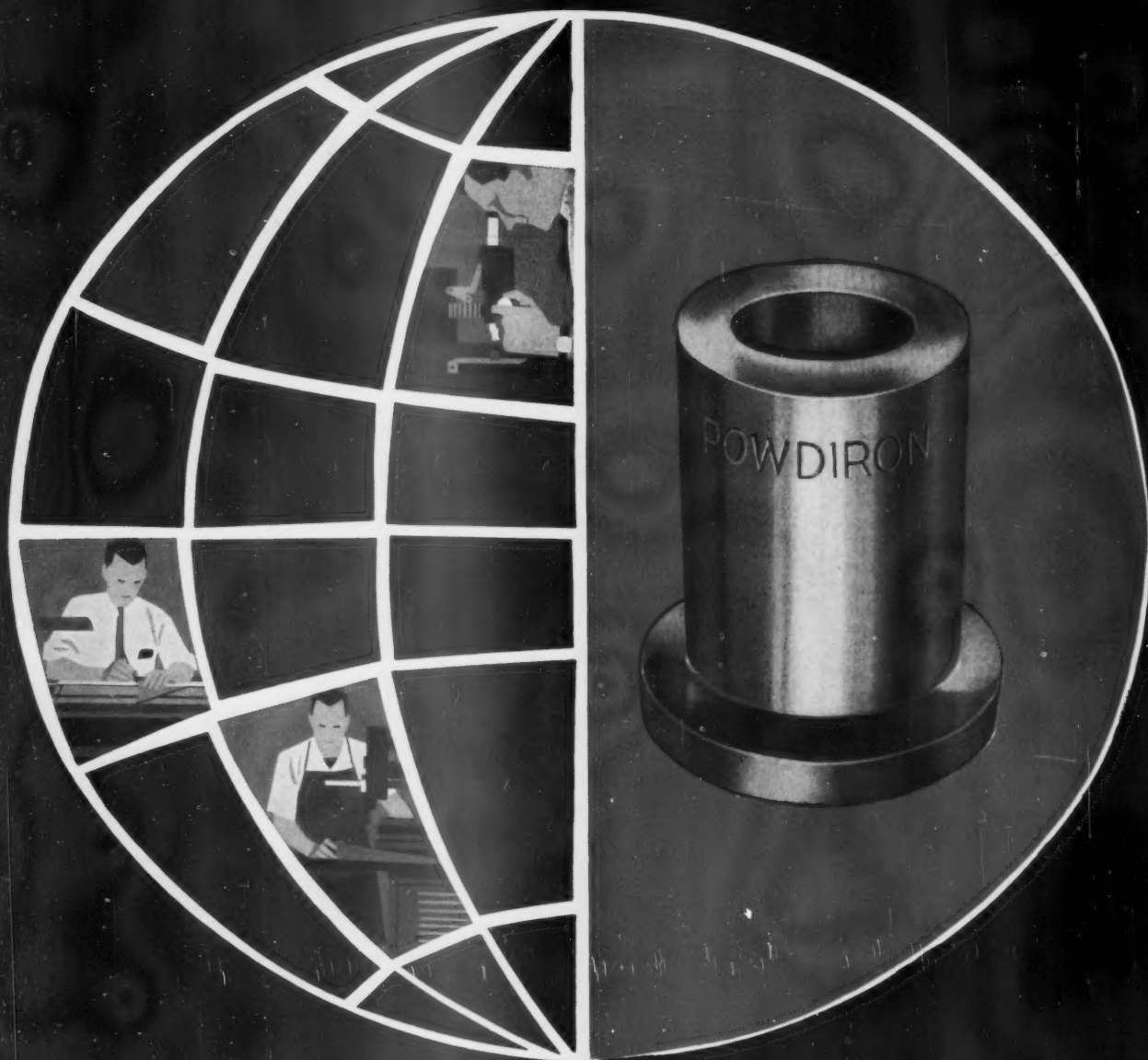
## Business News Analysis

Pulse of Business .....	7	Washington Report .....	23
Straws in the Trade Wind .....	13	Special Commodity Report: Copper ..	27
Sales, Inventories, Orders .....	15	Purchasing Follow-Up .....	31
The Trend of Prices .....	17		

## Regular Features

Information for Your Catalog Files ..	40	Products and Ideas .....	92
Letters to the Editor .....	46	Office Equipment and Supplies .....	116
Purchasing People .....	52	Association News .....	120
F.O.B. ....	58	News .....	132
Calendar of Coming Events .....	65	Book Reviews .....	136
Purchasing Pointers .....	67	Employment Service .....	150
Editorial: Are You Doing Your Job? ..	69	Index to Advertisers .....	152

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# Pulse of Business

## Business Prospects Are Getting Better

**B**USINESS PROSPECTS ARE BETTER even though the Washington economists are extremely cautious in admitting the possibility of any real forward movement. Undoubtedly, they will allow themselves more optimism as soon as any major portion of President Kennedy's program gets through Congress.

Industry is poised for an immediate improvement in steel, aluminum, and other metals now that more orders are coming through. March production of steel ingots is expected to reach 7 million tons, the highest level since last June and an increase of over 750,000 tons from February. There is considerable firmness in steel buying which is reflected by a moderately bullish market in steel scrap.

## Construction Is Key To Metals Pickup

The great hope for the metal industries lies in construction. The automobile industry, somewhat quiet at the moment, could erupt with large steel orders at the first sign of real improvement in sales. But until then, the steelmakers will be counting on the building trades for the biggest build-up in orders.

Contractors, and other users of plates, pipe, wire mesh, shapes, and re-inforcing bars are stepping up their demand—indicating greater willingness to begin building their inventories. The building products industry is buying more aluminum, as are manufacturers of transportation equipment and air conditioners.

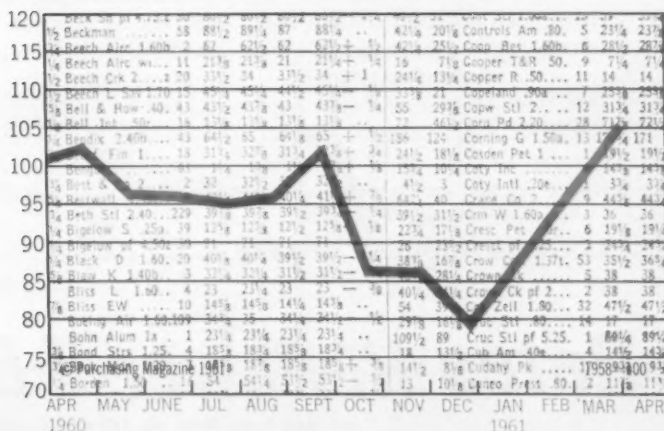
Nevertheless February employment figures were somewhat worse than predicted early in the year. The number of jobless rose to 5,705,000—or 6.8% of the work force.

Unfortunately, there is no simple solution to the unemployment problem. New additions to the labor force are at a rate double that of ten years ago, while the growth of automation reduces the number of people needed in the manufacturing industries. It takes a recession to accentuate these factors, but even in a boom they will continue to haunt the economy.

No doubt the rising wage level which industry experienced in

## Business Confidence Index

How P.A.s feel about the short-term economic outlook

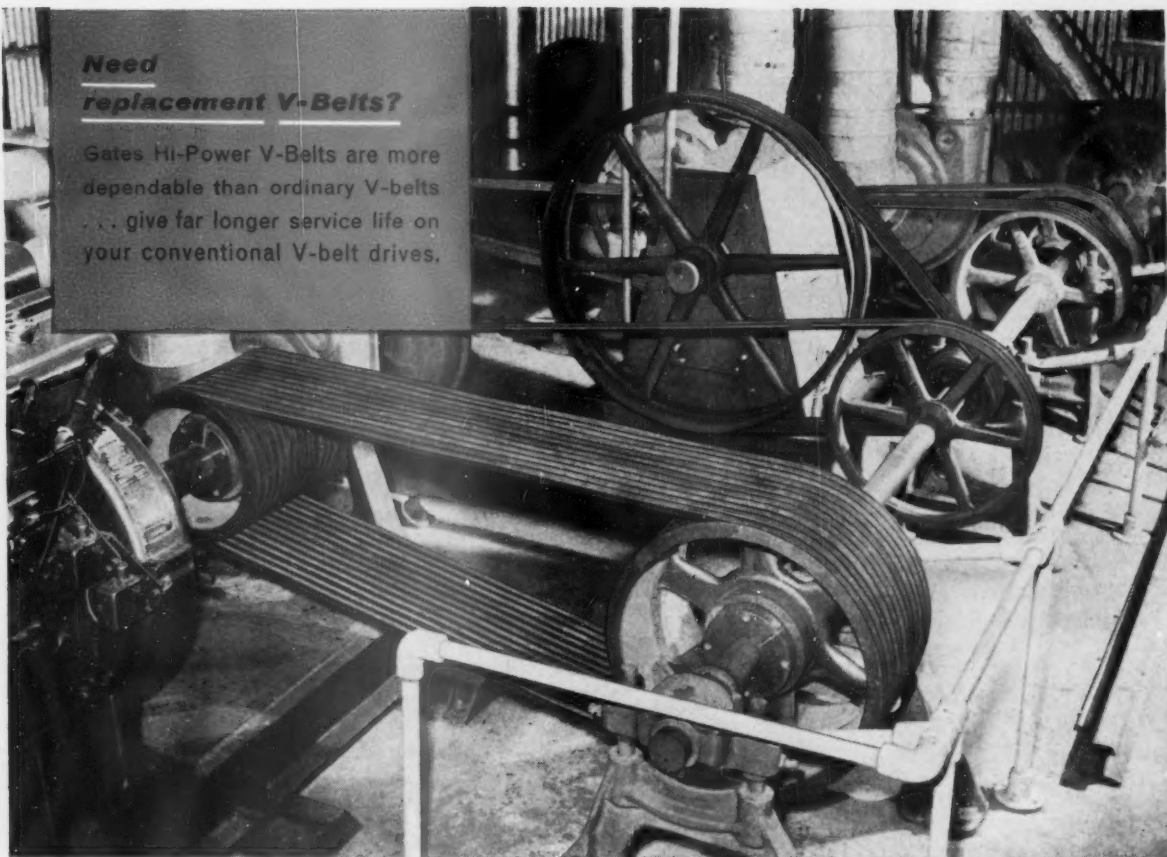


Purchasing Magazine's Business Confidence Index for March rose a sharp eight points to 105 (1958=100). This is the highest level the index has reached since February 1960, when it stood at 109.



### **Need replacement V-Belts?**

Gates Hi-Power V-Belts are more dependable than ordinary V-belts ... give far longer service life on your conventional V-belt drives.



## Why Gates Hi-Power V-Belts are industry's No. 1 choice for replacement belts

There are several important reasons why Gates Hi-Power V-Belts are preferred by most industrial V-belt users today.

The exclusive construction features of Gates Hi-Power V-Belts—Concave Sides (U.S. Pat. No. 1813698), Precisely-Engineered Arched Top, Flex-Bonded Tensile Member—make them more dependable than ordinary, conventional V-belts, giving you far longer belt life on even the toughest applications.

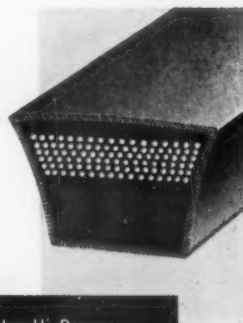
Moreover, because of Gates high standards of quality control, you get a perfectly matched set of Hi-Power V-Belts every time—every belt pulls its

share of the load throughout the long service of the drive, further increasing belt life.

**You get fast delivery from local stocks.**

Gates Distributors, located in all parts of the country, have large stocks of Hi-Power V-Belts on hand, backed by Gates Service Centers in every major industrial area. This means that you can get replacement V-belts quickly, day or night—reducing to a minimum costly production down-time.

*The Gates Distributor near you is a dependable source of supply for most of your maintenance needs. Call him for fast delivery of Gates Hi-Power V-Belts.*



Gates Hi-Power V-Belts are quickly available everywhere



Building the future on 50 years of progress



The Gates Rubber Company, Denver, Colorado

BP 40

# **Gates Hi-Power V-Belts**

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## Pulse of Business

### PRODUCTION

the post-war period drew older workers and women into the labor force. About 79% of the people in the labor force last year were 45 years or older. This compares with 73% ten years earlier.

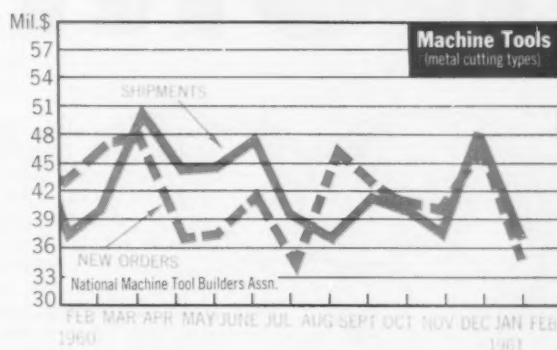
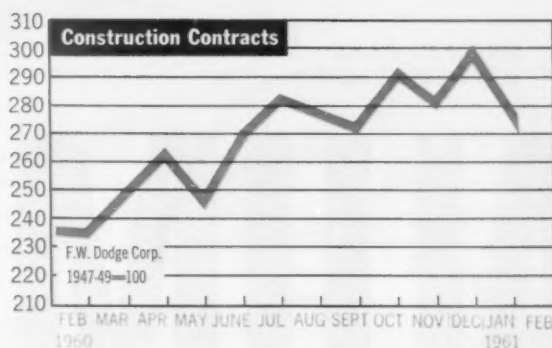
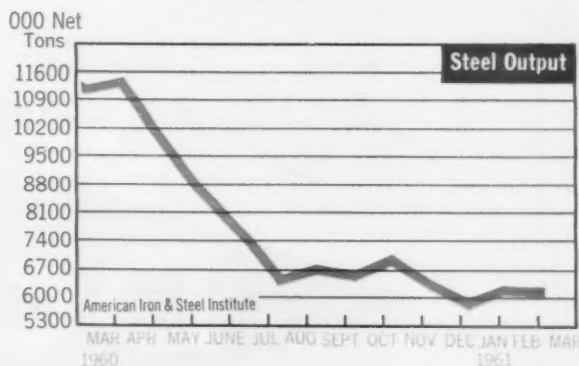
Persistently high unemployment rates will probably tend to keep young people in schools and colleges longer. They will also result in the transfer of some industrial jobs from women to men and from older to younger people. But such trends, of course, are slow in making themselves felt.

One possibly good effect of the current labor surplus is a leveling off of the upward surge of wages. However, a prolonged even level of wage rates can result in the slowing down of capital investment—since the need for labor-saving improvements will not be as compelling as it was previously.

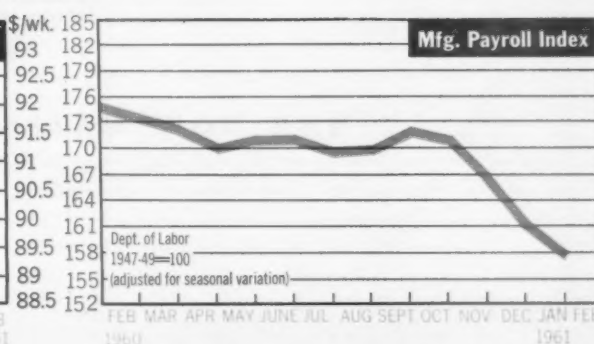
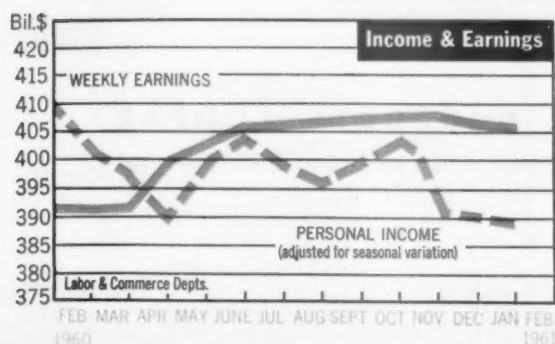
Industry this year will be closely watching how unemployment affects wage contracts. The United Automobile Workers Union, for instance, will be negotiating a new contract to replace the one expiring in August. The question now is whether the pattern of the General Electric settlement last year will prevail in the automobile industry, or whether Walter Reuther's union will continue to demand a substantially higher wage.

Greater awareness of the unemployment problem by the Administration in Washington will bring government negotiators into the contract talks at an early date. President Kennedy has indicated that he will appoint a committee of representatives of business, labor, and the public to work on methods of avoiding strikes. No doubt this committee will begin work early in the automobile negotiations.

Poorer automobile sales this year may help



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**THE DOW METAL PRODUCTS COMPANY**

*Division of The Dow Chemical Company*

## Pulse of Business

force early settlement. But it is not likely that the UAW will consent to any proposal that would modify the escalator clauses tied to cost-of-living increases.

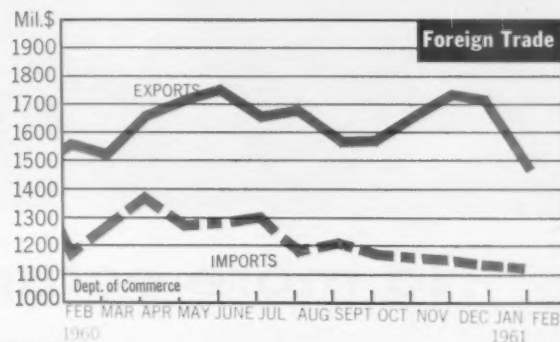
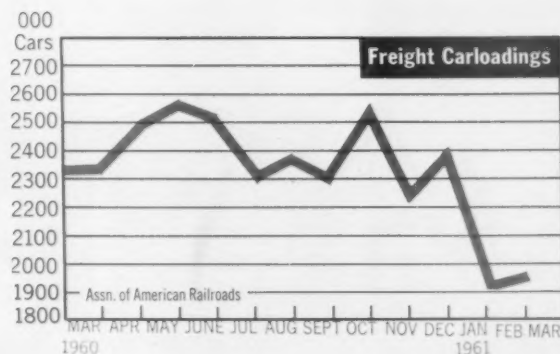
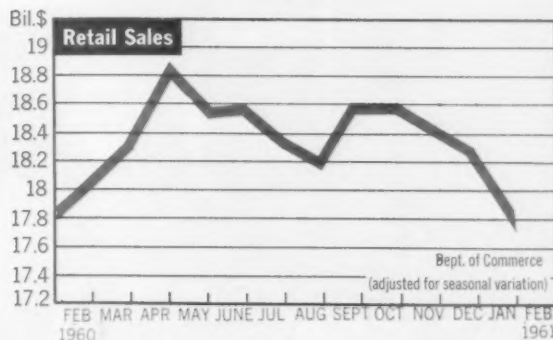
Analysis of the slack demand for automobiles indicates that a primary cause may be the reduction in the rate of increase in consumer income in recent years. While income has not actually fallen at any time in the post-war period, individual consumer income after taxes increased at a rate of 2.7% annually in the years 1955 through 1959, compared with an increase of almost 4% annually from 1947 through 1955.

President Kennedy's massive housing program, however, may help to boost income. It promises to funnel \$2.5 billion more into urban renewal and perhaps another \$0.5 billion in public housing. But the greatest assist will come from plans to increase funds available for long-term mortgages and to ease terms for down payments on private dwellings.

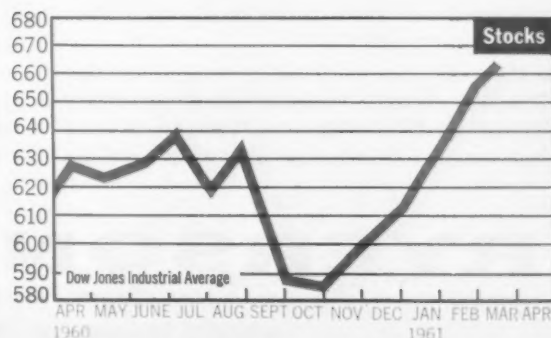
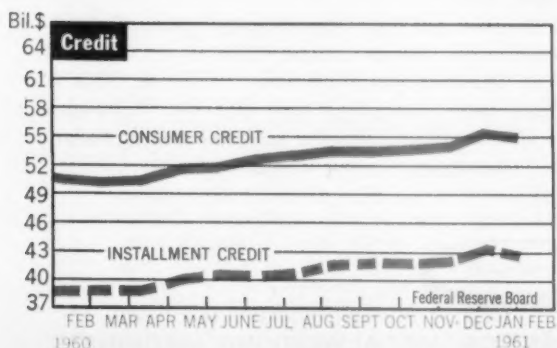
**THE BUSINESS SURVEY** Reports of local purchasing agent associations for February continue to be mixed. For example, the Chicago group says that there has been "some improvement in backlog, production, price, and inventory levels" but at the same time reports "a worsening of unemployment."

In Cleveland, the association notes that "The little upward flurry of production and new orders reported last month apparently is not the prelude to the ending of the current recession." But the Los Angeles association states "continued improvement in production and new orders" was reported.

### TRADE



### FINANCE





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## Straws in the Trade Wind

### ► MORE DEPRECIATION FLEXIBILITY—

Business should be granted greater flexibility in determining its depreciation allowances for tax purposes, says the Committee for Economic Development—a non-profit economic research and education organization. This change would stimulate private capital formation, it says. In addition, the committee wants profits on the sale of depreciated assets taxed as ordinary income to the extent of the depreciation previously deducted.

### ► NEW BUSINESS FORMATIONS OFF —

The number of new business formations last month fell to the lowest level since 1958. New formations amounted to 12,734—a 22% drop from the previous month's total of 16,340 and a 13% decline from the February 1960 level of 14,669.

### ► AIR FREIGHT RATES REDUCED —

Around the beginning of next month, United Air Lines will reduce freight rates on several commodities flown from the West Coast. Rates will be cut to 13 cents a ton-mile from the present 16 cent rate. Products affected include electrical parts, hardware, chemicals, and household appliances.

### For the P.A.'s Hot File . . .

Four out of five leading business executives, surveyed last month by Dun & Bradstreet, believe the recession has hit bottom. In fact, 28% of those polled feel that an economic recovery is already underway. Most optimistic were manufacturers, especially those who produce nondurables. These same businessmen proved reliable prophets in calling the timing of the economic upturns following the three previous postwar recessions.

### ► RISE IN STEEL WAREHOUSE BUYING

—Steel buyers are stepping up purchases from warehouses. Reason: inventories have been pared so low that buyers have to rely on warehouses to get them steel on short notice to meet delivery dates. In some sections of the country last month, shipments from steel service centers improved 10% over the November-December average.

### ► LEASING SPECIAL-BODY TRUCKS —

A new plan makes it possible to lease special-body trucks without maintenance for four to eight years. Under the plan, units can be engineered to the most rigorous specifications of purchasing agents, says Wheels, Inc., the sponsor. The program has been in experimental use with a number of major companies for two years already.

### ► BUSINESS FAILURE PATTERN CHANG-

ING—The industry pattern of business failures has shown some marked changes in the last 20 years, says the National Industrial Conference Board. In 1940, retail establishments accounted for 62% of all the failures—compared with 48% last year. During the same period, construction failures rose from 6% of the total to 17%. Commercial service failures more than doubled between 1940 and 1960.

### ► STYRENE PRICES HIT LOW —

Some chemical companies have trimmed the price of styrene monomer—used in making plastics and synthetic rubber—to a record low. The material, which is third to polyethylene and vinyl in volume of plastics ingredients, has been on a six-year downward price trend. Overcapacity is the apparent reason for the price cut.

### ► '61 BUSINESS OUTLAYS DOWN—

Spending for plant and equipment this year is expected to be \$34.6 billion—off 3% from the 1960 level of \$35.7 billion. According to the annual survey of the Commerce Department and the Securities and Exchange Commission, businessmen thought they would spend \$34.4 billion for expansion and modernization in the quarter just ending and \$33.8 billion in the second quarter.

# POWELL PERFORMANCE PAYS OFF

Any way you look at it, Powell performance really pays off. Take "availability" for instance.

You'll find that Powell makes just about any type of valve you may need—for oil, water, gas, steam, air and corrosive fluid applications. The same holds true for virtually any temperature and pressure. What's more, you'll find Powell valves are available in industry's widest selection of bronze, iron, steel and special alloys—from aluminum to zirconium. (The fact

is, Powell pioneered application of special alloys in valve design.)

In short, you'll find Powell performance also includes outstanding availability—of exactly the type valve you need. And, since Powell maintains large stocks both at the factory and key points across the country—you get exactly what you need, when you need it. For further information, contact your nearby Powell Valve distributor or write The Wm. Powell Co., Cincinnati 22, Ohio.

125-pound All Iron Gate Valve. Outside screw rising stem and yoke. Flanged ends, 2" through 30". Screwed ends, 2" through 8". Iron body bronze mounted valves also available.



175-pound W.O.G. Hand-Steel flanged and Lubricated Plug Valve. Handwheel operated. Sizes 1" through 4". Available also with screwed ends. Catalog of complete line on request.



125-pound Iron Body Bronze Mounted Swing Check Valve. Bolted flanged cap. Can be used in either horizontal or vertical position. Sizes, flanged, 2" through 18"; screwed, 2" through 4". Can also be furnished in all iron.

115th year of manufacturing industrial valves for the free world

**POWELL DEPENDABLE VALVES**

THE WM. POWELL COMPANY CINCINNATI 22, OHIO

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## Pulse of Business

### Sales, Inventories, Orders

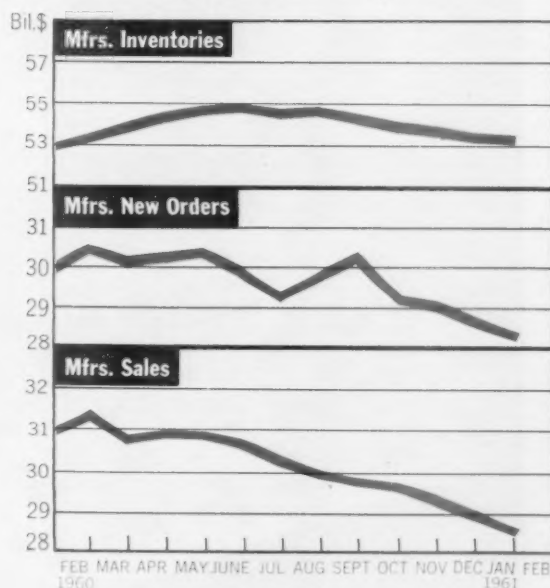
#### ● January Inventories Fall Slightly to \$53.5 Billion

SEASONALLY-ADJUSTED manufacturers' sales and new orders declined in January, reports the Department of Commerce. Inventories also fell, but the drop was the smallest since stocks began to move downward last summer.

Sales dropped about 2%—or \$500 million—to \$28.6 billion. Only the motor vehicle industry showed an appreciable sales loss during the month. Nondurables were down a slight 1% to \$15.3 billion.

New business was off 1% to \$28.4 billion. The \$300 million decline was largely in durable goods industries.

Inventories dipped \$100 million to \$53.5 billion. Unlike the inventory cutbacks in the final quarter last year, the January drop occurred in finished goods rather than in working stocks.



#### Manufacturers' Sales Seasonally Adjusted (Millions of Dollars)

	1960		1961			
	Jan.	Sept.	Oct.	Nov.	Dec. (r)	Jan. (p)
All manufacturing industries.....	30,787	30,090	29,600	29,250	29,140	28,590
Durable-goods industries.....	15,352	14,410	14,080	13,810	13,620	13,260
Primary metal.....	2,656	1,920	1,790	1,790	1,750	1,750
Fabricated metal.....	1,690	1,650	1,530	1,570	1,580	1,530
Machinery.....	4,695	4,660	4,590	4,610	4,580	4,670
Transportation equipment.....	3,622	3,570	3,630	3,300	3,150	2,820
Lumber and furniture.....	843	810	780	790	800	760
Stone, clay, and glass.....	737	730	700	700	700	700
Non-durable goods industries.....	15,435	15,670	15,520	15,440	15,510	15,330
Food and beverages.....	4,723	4,690	4,700	4,660	4,740	4,740
Tobacco.....	387	390	390	420	390	410
Textile.....	1,226	1,200	1,150	1,130	1,140	1,110
Paper.....	994	1,090	1,040	1,050	1,060	1,080
Chemical.....	2,268	2,300	2,260	2,220	2,260	2,240
Petroleum and coal.....	3,044	3,200	3,230	3,190	3,220	3,200
Rubber.....	506	510	490	500	470	450

#### Manufacturers' Inventories Seasonally Adjusted (Millions of Dollars)

	1960	1961	1961	1961	1961	1961
	Jan.	Sept.	Oct.	Nov.	Dec.	Jan.
All manufacturing industries.....	53,182	54,710	54,380	54,010	53,640	53,530
Durable-goods industries.....	30,622	31,840	31,430	31,070	30,790	30,630
Primary metal.....	4,172	4,640	4,570	4,520	4,500	4,480
Fabricated metal.....	3,091	3,270	3,180	3,100	3,090	3,060
Machinery.....	10,174	10,530	10,440	10,350	10,350	10,270
Transportation equipment.....	7,308	7,240	7,100	7,020	6,840	6,840
Lumber and furniture.....	1,886	1,940	1,960	1,930	1,850	1,850
Stone, clay, and glass.....	1,381	1,460	1,460	1,430	1,440	1,440
Non-durable goods industries.....	22,560	22,870	22,950	22,930	22,850	22,900
Food and beverage.....	4,796	4,980	5,010	4,960	4,970	4,980
Tobacco.....	1,975	2,000	2,030	2,020	2,010	1,990
Textile.....	2,554	2,640	2,640	2,660	2,670	2,720
Paper.....	1,541	1,640	1,650	1,650	1,630	1,620
Chemical.....	4,050	4,160	4,180	4,180	4,160	4,160
Petroleum and coal.....	3,405	3,260	3,280	3,300	3,280	3,280
Rubber.....	1,148	1,200	1,160	1,140	1,120	1,110

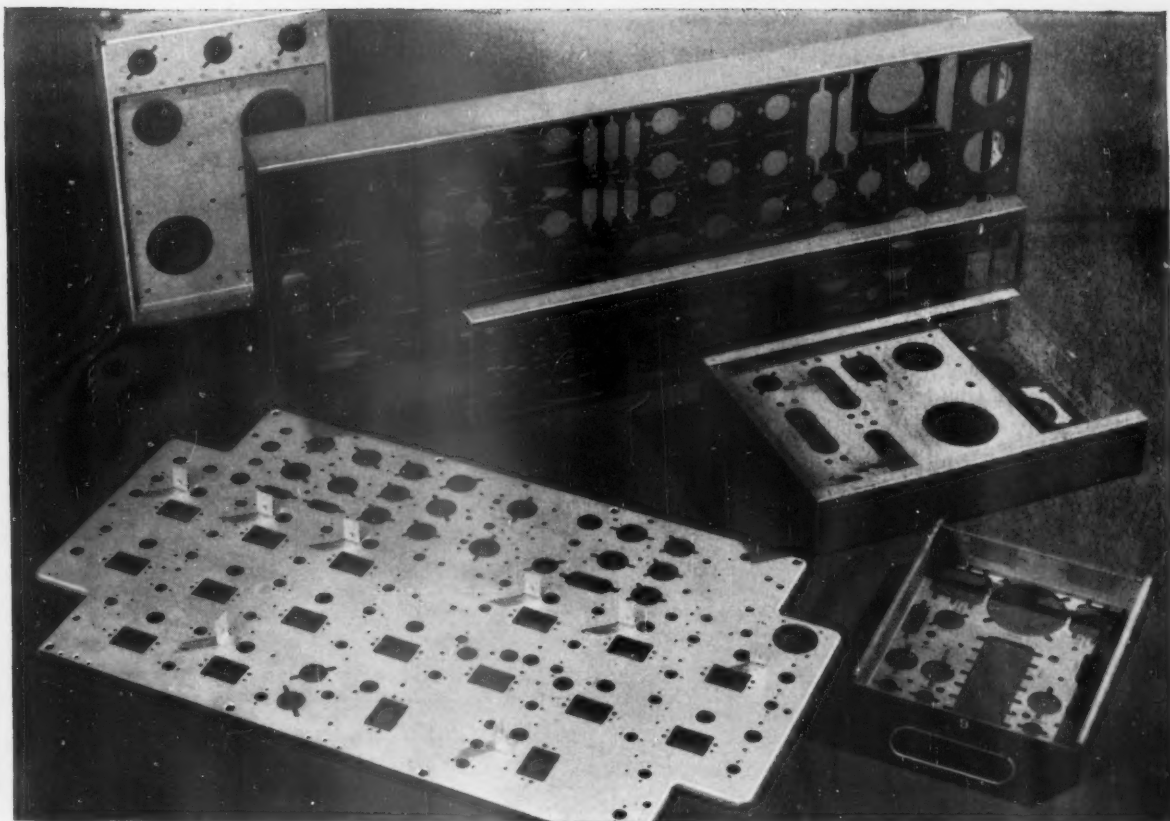
#### Manufacturers' New Orders Seasonally Adjusted (Millions of Dollars)

	1960	1961	1961	1961	1961	1961
	Jan.	Sept.	Oct.	Nov.	Dec.	Jan.
All manufacturing industries.....	29,698	30,400	29,210	29,020	28,700	28,410
Durable-goods industries.....	14,231	14,620	13,740	13,600	13,220	13,020
Non-durable goods industries.....	15,467	15,780	15,470	15,420	15,480	15,390

(r) Revised.

(p) Preliminary.





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For More Facts Write No. 161 on Information Card—Page 32



## Pulse of Business

### The Trend of Prices

- **Nonferrous Suppliers Still Waiting for Upturn**
- **Lead Buying Spotty, Zinc Inventories Rising**

**A**N AIR OF uncertainty hangs over the non-ferrous metal markets. While there have been spotty signs of a pickup, there has been no firm indication as yet of a market upturn.

This is the market outlook in a few major nonferrous metals:

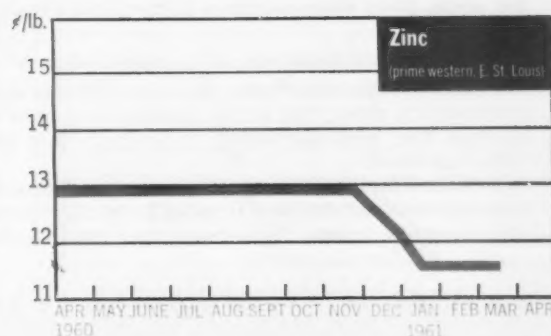
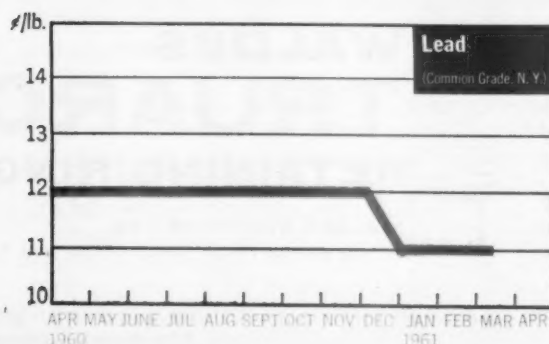
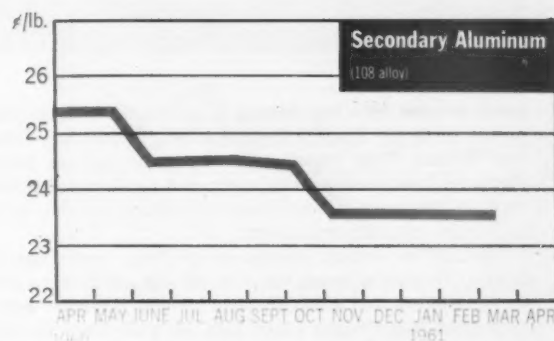
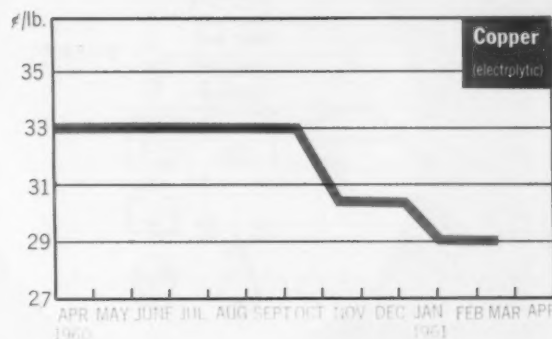
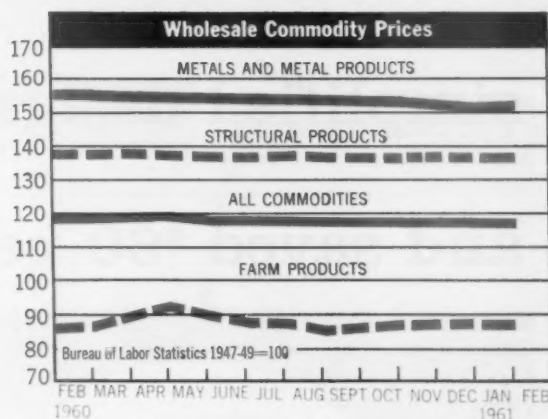
**Tin:** A lag in tin buying has been noted in the New York market. The same general tone is apparent in both London and Singapore.

But possibly because of a favorable tin outlook, the International Tin Council has decided not to fix a permissible export quota for the second quarter. The quotas, which had been in force since late 1957, were also lifted in the last quarter of 1960 and in the current quarter.

**Zinc:** Sales have stepped up recently. Most of the increase has come from P.A.'s for steel mills who were buying for galvanizing operations.

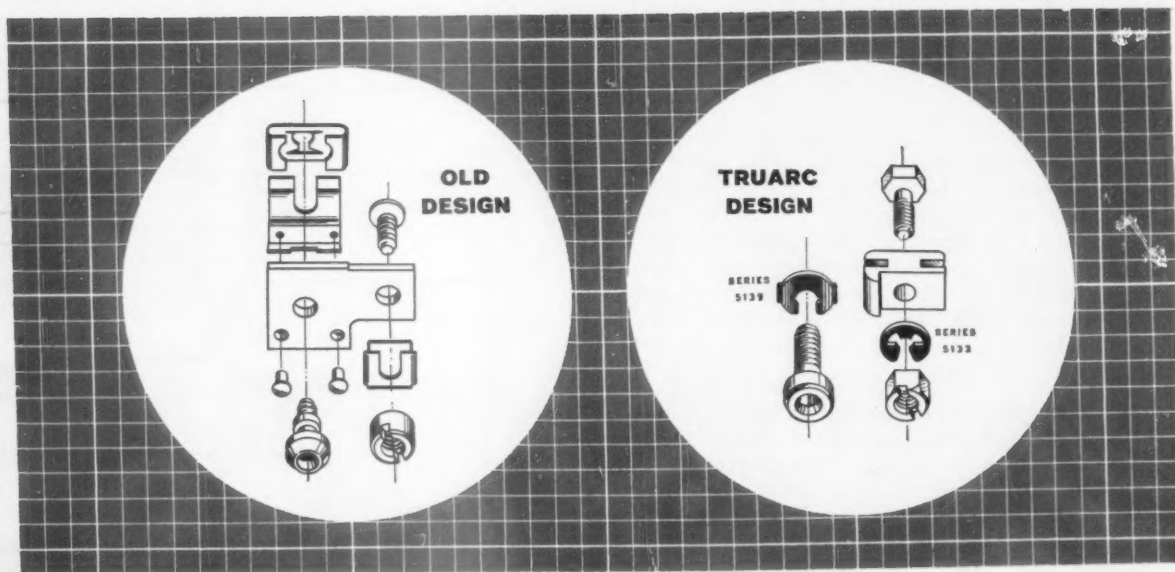
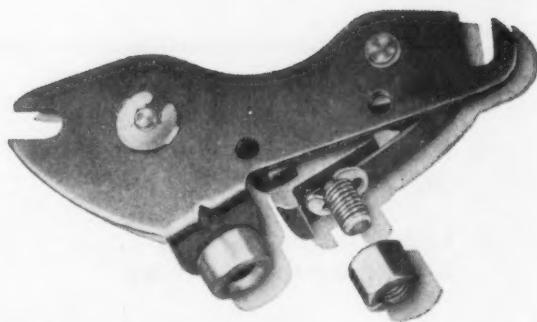
Last month, however, production of slab zinc continued to outpace shipments. Result: smelters' inventories showed a further rise. Worldwide shipments totaled 61,605 tons, while production amounted to 70,189 tons—despite voluntary cutbacks put into effect by some smelters. Total inventories were 214,956 tons, approximately 8600 tons higher than the previous month.

**Copper:** Recent purchases for delivery this month have generally been of a filling-in nature. Generally, demand has dropped somewhat



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and saved \$60 per 1000 units



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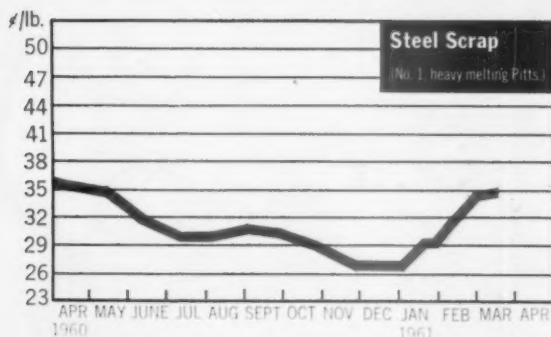
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## Pulse of Business

### More on Price Trends



from the fairly heavy pace of early March.

Some brass scrap grades are currently in tight supply. Export shipments to Japan are cutting into the available supply and less scrap is being generated because of the generally low level of industrial operations.

The prospect of further cuts in copper production is still on the horizon. Robert G. Page, president of Phelps Dodge Corporation, says he doubts "whether the curtailment thus far will be sufficient to bring production and consumption into balance."

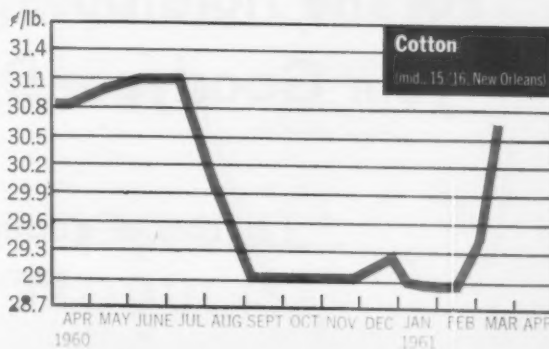
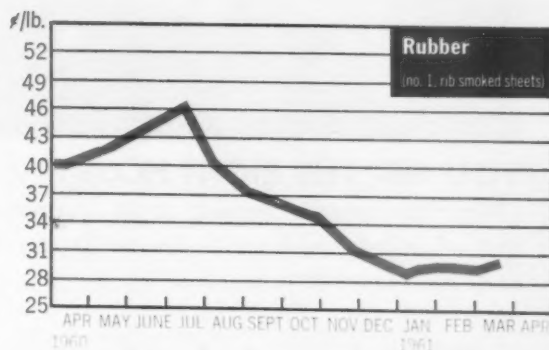
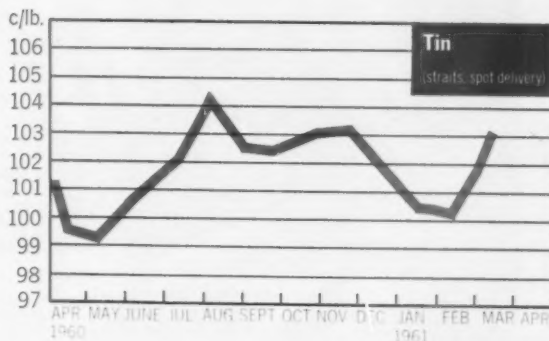
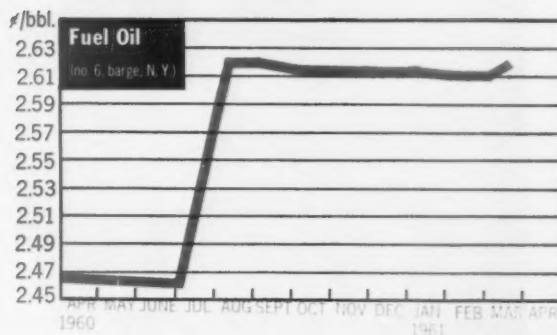
**Lead:** Buying has been spotty in recent weeks; as soon as ordering picks up, there is an almost immediate tapering off. The London market, however, seems to be gaining strength.

World deliveries of lead turned up nearly 8000 tons in January to 129,518. Shortly thereafter, the Department of Commerce's Business and Defense Services Administration predicted that U. S. lead consumption this year would rise slightly over 1960. Last year, lead sales totaled about 1,040,000 tons, according to preliminary reports.

**Aluminum:** Aluminum suppliers are generally predicting a favorable long-term outlook for their industry. Foreign consumption is expected to increase at a faster rate than domestic demand.

D. A. Rhoades, president of Kaiser Aluminum & Chemical Corporation, says that the return of large-scale demand for aluminum is "inevitable". He adds, however, some of his firm's reduction lines are still idle.

Rhoades warns against the threat of foreign aluminum entering the United States. He urges support of an adequate tariff or allocation policy to protect the aluminum industry in both peace and war.



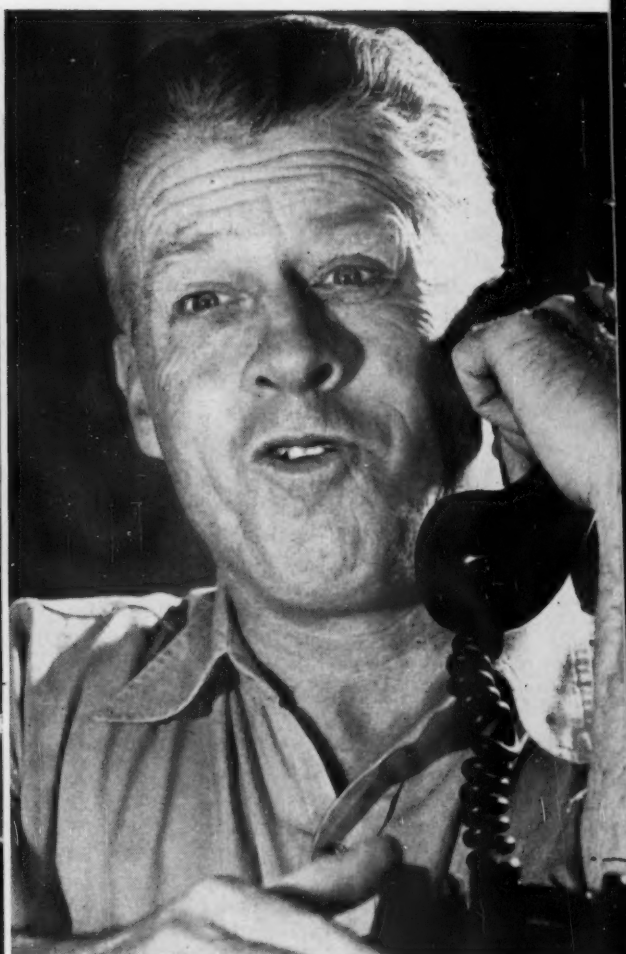


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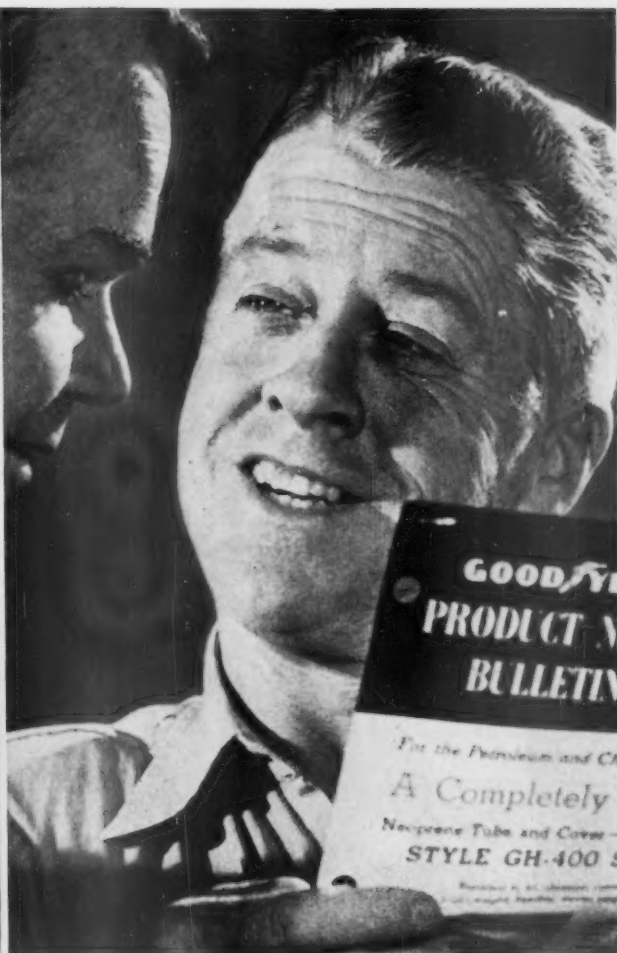


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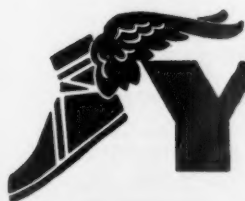


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Bearing Distributors  
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General Bearings  
**Louisville, Kentucky**  
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**Omaha, Nebraska**  
Precision Bearing & Trans.  
**Orlando, Florida**  
Miller Bearings  
**Phoenix, Arizona**  
Semon Bearing & Supply  
**Pittsburgh, Pennsylvania**  
Bearing Service  
**Pittsfield, Massachusetts**  
Bearing Distributors  
**Pocatello, Idaho**  
Western Bearings  
**Port Arthur, Texas**  
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**Portland, Oregon**  
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**Saginaw, Michigan**  
Michigan Bearing  
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Bearing Eng. & Sales  
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**Tampa, Florida**  
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**Twin Falls, Idaho**  
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# See Beginning of Business Upturn

**T**HE MILDEST of the postwar recessions is coming to an end. The upturn may come within the next few months. This is the advice President Kennedy is getting from Walter W. Heller, chairman of the Council of Economic Advisers.

Heller and his staff have fixed the onslaught of the current recession as May of last year. They base their hopes of an economic upturn on a rise in consumer spending, more government expenditures, the President's recovery program, and "some prospect of an assist from inventories

within several months."

But the upturn, they warn, would be only the beginning of the solution to our economic problems. The White House advisers are laying the groundwork for a push toward the "New Frontier" which may mean a faster growth rate in the economy.

The challenge, according to the White House economists, is a gap between what we are producing and what we can produce. This gap, they claim, represents some \$50 billion in economic activity.

So far, the administration has taken "modest" measures to meet

the immediate problems of the recession. But these measures are considered sufficient to carry the nation over to a recovery cycle. There is still some talk here that a tax cut will be necessary to stimulate consumer buying, but the current thinking is that this will not be needed.

The President's advisers fear that an end to the recession in mid-summer will leave much of the Kennedy economic reform shorn of its urgency. With this in mind, the Administration is seeking to spotlight the main economic problem as a slowdown in our rate of growth. Even with the recession over, they warn that unless GNP is stepped up sharply, the level of unemployment at the end of this year could be very high.

An annual growth rate of 3.5%—plus a 2% productivity increase—is needed just to keep pace with the new entrants into the labor field. To bring unemployment to a tolerable level—roughly 4% of the workforce—will take an even higher rate of growth.

### See Inventory Rise at Mid-Year

The President's economic advisers are unwilling to say with certainty that the inventory decline has run its course. The swing from inventory accumulation at an annual rate of \$11.4 billion in the first quarter of 1960 to a \$3 billion liquidation rate in the fourth quarter represents a \$14.4 billion net reduction in demand.

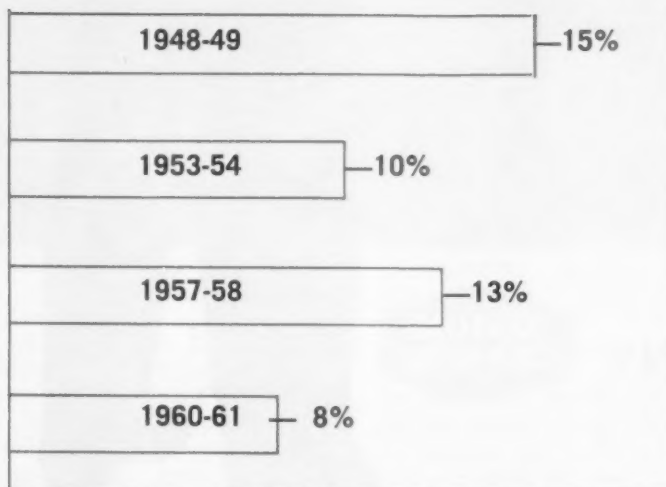
This drop was offset in good part by increases in government purchases and in net exports. These increases shielded the economy from the full impact of the recession.

At some point, buyers will again begin building inventory. But the government economists say they can't clock the turn for possibly some months after it has taken place.

For the present, the White House assessment is this: the

## How Bad Is the Slump?

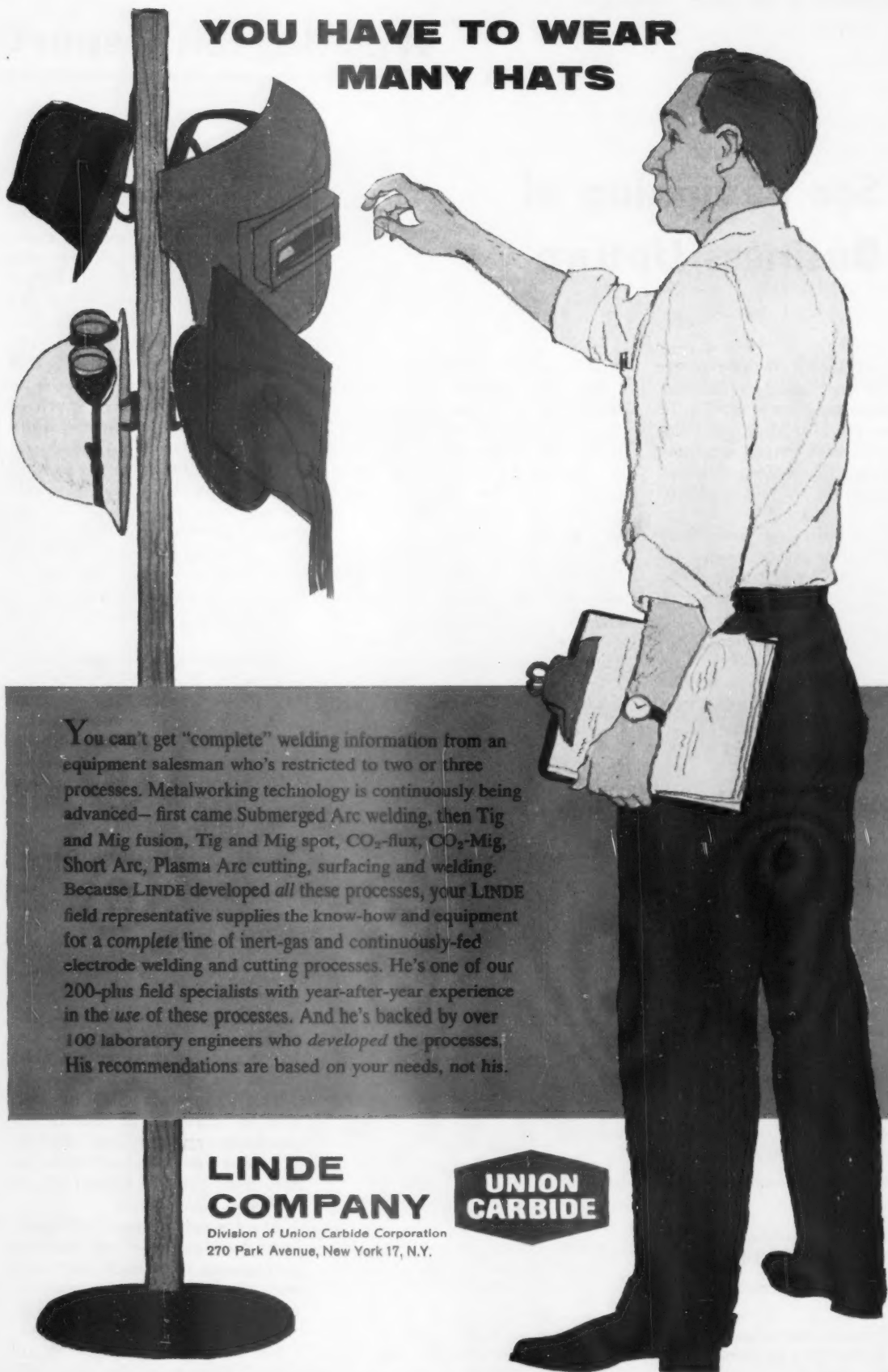
*In the four postwar recessions, industrial production declined . . .*



Many economists believe the '60-61 recession has hit its low point. If this is true, then the current slump would be the mildest since the end of World War II.



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short-run inventory cycle is superimposed on a longer-run trend toward lower stocks growing out of more efficient management. Thus the recovery during the first half of this year will stem from segments of demand other than inventories. A reversal of the current inventory liquidation is expected to take place after mid-year.

### • **FTC Exploring Problem Of 'Administered' Prices**

The Federal Trade Commission is exploring what it can do to combat the problem of "administered" prices.

There is adequate legal power now to move where the government can show a "conspiracy" to fix prices. The problem, as seen by FTC staff technicians, is whether there are grounds for government action when there is no evidence of price conspiracy—but where the pattern of pricing within an industry is fairly rigid and it bunches around the price list of the bigger companies.

Hearings last year before the Kefauver Anti-Monopoly Subcommittee of the Senate Judiciary Committee placed major emphasis on price trends in industries where the policy of the largest producers set the patterns for everyone else.

Senator Kefauver stated that as a result of "administered" prices in basic industries, prices tend to remain firm with little regard to market influences. He suggested that a few suppliers controlled the amount and price of certain products available to a large number of buyers.

Rand Dixon, chief counsel of the Kefauver subcommittee, has been appointed as Federal Trade Commission chairman by President Kennedy. Another Kennedy appointee to the FTC is Everett McIntyre, who was counsel for the House Small Business Committee. Thus it appears that the FTC, with its new members, will explore the same course that was vigorously pushed by the Kefauver group.

### • **Government Plans to Raise Capital Spending**

The Kennedy program to stimulate investment in plant and equipment will be aimed at raising the level of capital spending above the projected rate of \$34.6 billion for this year. This projection is contained in the annual survey conducted by the Securities and Exchange Commission and the Department of Commerce.

The survey indicates that capital spending plans for the current year is 3% lower than last year. The decline will take place in the first half of the year, followed by a mild increase in the second half.

A significant factor is that the projected capital spending plans would add little to recovery. They are generally geared to a wait-and-see attitude on the part of the business community. With much excess capacity, business interest in spending has been largely concentrated on labor-saving devices.

Kennedy advisers view falling off of capital spending as increasing the average age of equipment. The average age of equipment is now nine years.

In the past, the SEC and Commerce Department survey results have been a fairly accurate index of actual cash outlays. The question now is how much specific tax incentive should be given to encourage capital investment this year.

### • **Recommend Changes in Federal Prices Indexes**

A committee of the National Bureau of Economic Research has recommended that changes and improvements be made in federal prices indexes.

In a report to the Congressional Joint Economic Committee, the bureau's Price Statistics Review Committee suggests periodic revisions of the price weighting procedure. It also recommends probability sampling, quicker introduction of new commodities, and the allocation of more funds to federal price collection agencies. —A. N. Weckler



Hardinge draw-in collets are specified for:

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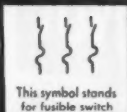


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**I-T-E CIRCUIT BREAKER COMPANY**  
BULLDOG ELECTRIC PRODUCTS DIVISION



## **Special Commodity Report**

### **Copper: Buyers' Market To Continue Through 1961**

**D**ESPITE THREATS of a flare-up in some of the world's key producing areas and the possibility of strikes at mining and refining operations in the U. S., the 1961 copper picture looks good for P.A.'s.

The situation is this: Potential supply is so far in excess of demand that there can be no question of a shortage. Prices will range under those of 1960. Deliveries are speedy as suppliers in quest of orders are only too glad to comply with requests for immediate shipment.

#### **Congo Copper a Question**

One big question in copper is whether the raging civil disorder in The Republic of the Congo will flow over into the copper-rich Katanga Province. Despite the almost constant violence in much of the country since independence from Belgium was granted last July, the lush producing properties of the Union Miniere de Haut Katanga have operated virtually uninterrupted.

Can the pro-Belgian Katanga strong man, Moise Tshombe, continue to keep the trouble from spilling over into his area? The future is uncertain enough to keep the nerves of the world copper market on edge. Over the past few weeks, the price of the metal in Europe has strengthened significantly.

Just a few miles south of Katanga, the richest copper mines in the world—Northern Rhodesia's

famed Copperbelt—operate under the threat of African nationalism that could flare up at any moment.

The American copper industry has benefited from all this uncertainty. With the higher prices now prevailing in Europe, it's no longer economical for foreign producers to ship metal to this country. So domestic companies are getting most of the business that importers formerly enjoyed. Europe has even stepped up its copper buying from the U.S.

While exports from America have been brisk all year thanks to the high level of overseas industrial activity, they're now even better. Some European users evidently are attempting to spread out their sources of supply to guard against the chance that an African shutdown would cut off their access to the red metal.

#### **The African Outlook**

Here's how the African outlook shapes up: the bulk of the Congo's income stems from its mineral wealth. This elementary economic fact is recognized by even the most extreme left wing leaders. It's unlikely that Congo politicians would countenance any situation which would cause a lengthy shutdown of the Katanga mines. In Northern Rhodesia, the white government seems firmly in the saddle and able to cope with any trouble.

Another question on the 1961 copper scene is whether those

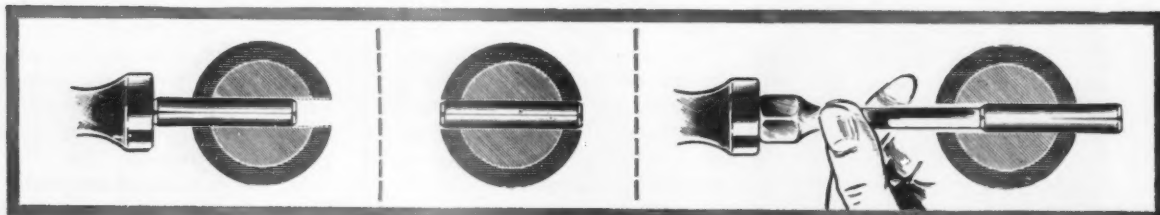
- **No Possibility of  
A Shortage in 1961**
- **Rhodesia Flareup  
Seems Unlikely**
- **Brass Mill Sales  
Erratic in 1st Quarter**
- **See No New Legislation  
To Aid U.S. Producers**



# what makes this fastener DIFFERENT?



## HOW YOU INSERT IT



Drives easily by hammer, arbor press, or air cylinder and can be readily adapted to an automatic hopper feed. Requires only a standard hole, drilled to normal production-line tolerances.

Locks securely in place without using a secondary locking device; won't loosen despite impact loading, stress reversals, or severe vibration.

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## HOW YOU SAVE

You pay less for Rollpins than for most tapered, notched, grooved or dowel pins. Installation costs are substantially less than for any fastener requiring a precision fit or secondary locking operations.

Because of their tubular shape, Rollpins are lighter than solid pins. Production maintenance is reduced with Rollpins: they do not loosen and because of their spring action they tend to conform to the drilled hole in which they're inserted, without material hole wear, eliminating the necessity of re-drilling or using oversized pins.

## MATERIALS AND SIZES

Standard Rollpins are made from carbon steel and Type 420 corrosion resistant steel. They're also available in beryllium copper for applications requiring exceptional resistance to corrosive attack, good electrical, anti-magnetic, and non-sparking properties. Stock sizes range from .062" to .500" in carbon and stainless steels.



## ELASTIC STOP NUT CORPORATION OF AMERICA

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Please send me the following free fastening information:

- ☐ Rollpin Bulletin  
☐ Elastic Stop nut Bulletin

- ☐ Here is a drawing of our product. What self-locking fastener would you suggest?

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U. S. operations with labor contracts that expire in June and July can work out a peaceful solution with the unions. The alternative could be a repetition of the type of disagreements that led to lengthy strikes in 1959 and early 1960. New contracts have to be negotiated for about one-third of the U. S. industry—mainly at facilities of the Kennecott Copper Corp., the nation's largest producer.

A strike, however, appears to be almost out of the question because of the state of the economy and the high level of unemployment. If there is a strike, however, union rivalry rather than a management-worker tiff is likely to be the real cause. The United Steelworkers of America has been running a strong drive to enlist more members among copper workers, mainly at the expense of the International Union of Mine, Mill and Smelter Workers.

The USW may press for a hefty package to woo more workers to its ranks. If this happens, Mine Mill may be even more militant, for troubles have already been multiplying for the union. Its membership is down, funds are low, and there's dissension among both union leaders and rank and file.

The odds, though, favor no copper strike this year.

There's little for P.A.'s to worry

about in the way of a shortage. In fact, there's too much copper available. The industry has heavy excess capacity and has been producing at too high a rate.

Over the past few months, Free World producers have cut back output by around 25,000 tons a month. It will be several weeks yet before all these curtailments are felt, but unless demand picks up, there will still be an excess of production over demand.

If the unlikely situation of a disruption in African production and a strike in the U. S. occurred, there would still be slight chance of a shortage. Free World producer stocks totaled 436,889 tons in January; inventories in the U. S. alone amounted to 144,132 tons. And the government has thousands of tons of copper in the Defense Production Act inventory that it could dispose of.

## Sales Are Better

U. S. demand is still slow, but there have been signs of an upturn lately. It's still too early to tell if this is just a seasonal improvement or if demand is finally beginning to pick up. To date, the gain is spotty although there seems to be more optimism in the market than in some time.

Brass mills, the copper industry's number one customer, also report a gain in business. Like the producers, the mills don't

know if their fortunes are beginning to improve or if they are just seeing one of those sporadic pickups.

## Prices Becoming Firmer

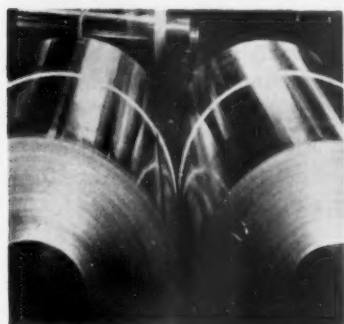
One result of the African troubles has been a firming in U. S. producer and custom smelter prices. Copper scrap prices are higher, partly because less scrap has been generated over the past few months and partly because export demand is good—particularly from Japan.

If scrap prices stay at current levels and there's no easing of tension in the African copper areas, the custom smelter price could rise modestly over the next few weeks. A change in the primary price any time soon is unlikely.

A strike in the U. S. at mid-summer, combined with a heightening of the African crisis, would probably bring a rise in primary copper. So would a major disruption of African production.

There will be continued pressure from mine state legislators in Congress to pass some sort of bill to aid the domestic copper industry. However, neither the Administration nor Congress will probably go along with any such legislation.

To sum up: throughout the year, it will continue to be a buyer's market in copper.



## Free World Copper Stocks Keep Mounting

Aug. 1960	....	383,305	Dec. 1960	....	427,782
Sept. 1960	....	378,845	Jan. 1961	....	436,889
Oct. 1960	....	408,152	Feb. 1961	....	439,000*
Nov. 1960	....	428,192	Mar. 1961	....	441,000*

(refined copper in tons)  
Source: Copper Institute  
\*Estimated

World-wide inventories of copper reached an estimated 441,000 tons this month. Ample supply is indicated for the rest of 1961.

# NEW FROM DISSTON



## MOST ADVANCED HIGH SPEED STEEL BAND SAW BLADE AVAILABLE

Four exclusive production *firsts* increase blade life 30 times over regular blades.

- **EXCLUSIVE "FLOW-SET"** — Newly developed equipment produces extremely precise setting of saw teeth. The precision "flow-set" evenly distributes the chip load to each set tooth. You get maximum cutting efficiency, smoother cuts and longer blade life — up to 30 times over that of regular blades.
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- **EXCLUSIVE "LIFE WELD"** — New, specially built welding equipment is used in the joining of each Disston band. Perfect match of teeth, proper blade alignment and superior weld dressing give you a smoother running blade.
- **EXCLUSIVE "EXTRA SMOOTH"** — New satin finish means less friction guide drag and closer guide adjustment for straighter, truer cuts. Uniform coolant flow and minimum material build-up on side of blade.

Add up these Disston exclusives — see why new Disston High Speed Steel Bands offer more for your money than any other blade!

DISSTON DIVISION



H. K. PORTER COMPANY, INC.

# Purchasing Follow-up

## Design Engineering Show To Feature VA Center

A value analysis information center will be the theme of the Gries Reproducer Corporation exhibit at the 1961 Design Engineering Show.

The show—to be held in Cobo Hall, Detroit, on May 22-25—will feature many exhibits of interest to purchasing agents and other industrial executives. Gries' booth

will illustrate many of the latest methods of improving product design and reducing component cost through the use of small, precision die castings and plastic moldings.

The small parts value analysis center shows how the single cavity technique produces with uniformity and precision. P.A.'s will be able to observe at first hand how unit costs can be reduced by eliminating expensive secondary

operations required in other production methods.

Savings up to 80% have been made through die casting and plastic molding operations. Among the companies that have taken advantage of these value analysis savings are Emenee Industries, International Business Machines, and General Electric Company.

## GSA Speeding Purchases To Help Fight Recession

The General Services Administration is speeding up its purchases in an effort to help ease the nation's economic plight.

Purchases of air conditioning units and other operation equipment for public buildings are being accelerated, says Administrator John L. Moore. Replenishment orders planned for the balance of fiscal 1961 are being placed now for the GSA warehouses across the country that stock supplies for federal agencies.

Other steps that GSA is taking include:

- Channeling procurement into labor-surplus areas.
- Encouraging prime contractors to subcontract in regions of economic distress.
- Alerting chambers of commerce in those areas of GSA procurement opportunities.

## AF Saves \$4.5 Million Through Competitive Bids

The Air Force is stepping up the number of spare part items bought through competitive bidding.

Result of this program has been substantially lower costs for spare parts. In the last half of 1960, the Air Material Command saved \$4.5 million.

Competitive bidding is used when the AF has sufficient data and blueprints, when personal safety or operation of the equipment isn't jeopardized, and when expensive tooling isn't required.

## Value Analysis Saves \$1.5 Million



C.H. Eifert (c.), P.A. for Rheem's home products group, is congratulated by Vearl J. Heinis (r.), group vice president, for winning the company's VA contest. Purchasing vice president George J. Papas presented the award.

A VALUE ANALYSIS contest among the divisions and plants of Rheem Manufacturing Company in 1960 resulted in ideas that will save \$1.5 million annually.

The winning division was the company's home products group, headquartered in Chicago.

Contest standings were computed according to a formula that adjusted for differences in kinds and amounts of purchases in the various company units. Standings, ideas submitted, and other contest news were reported in the company's monthly value analysis newsletter, prepared by K. E. Riha and W. H. Roy of the corporate purchasing staff.

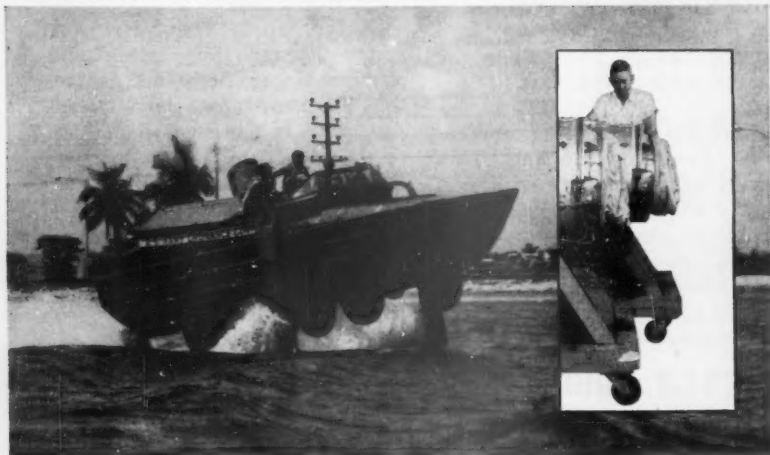
George J. Papas, vice president-purchasing, presented the award to C. H. Eifert, division purchasing agent and head of its value analysis committee.



# MATERIALS-HANDLING NEWS

NEW AND UNUSUAL APPLICATIONS OF BASSICK CASTERS THAT MIGHT BE ADAPTED TO YOUR HANDLING PROBLEMS

## "DUCK" GETS A LIFT FROM BASSICK'S



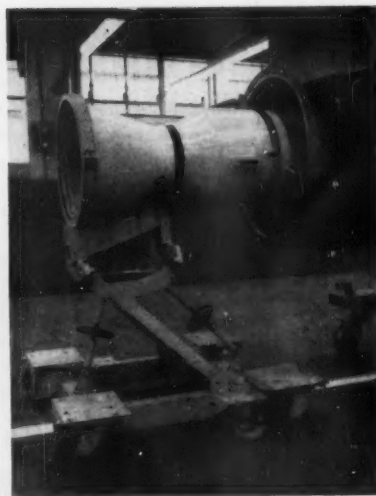
Here's a boat that rides on stilts.

It's the U.S. Army's "Flying Duck" that attains speeds up to 50 miles an hour on hydrofoil wings that hold it suspended several feet above the water.

But, new vehicle, old materials-handling problem—solved by Bassick: The "Flying Duck's" high-powered T53 gas turbine engine, made by Avco Corporation's Lycoming Division, moves down the pro-

duction line on heavy-duty Bassick "S99" casters.

Made of extra-heavy-gauge steel, formed in Bassick's 300-ton presses and with full double-race ball-bearing swivels, "S99" casters are built to take production-line abuse on power-pulled draglines, dollies, assembly fixtures at all manual speeds. They're especially recommended for warehouse draglines, too.



Boeing photo

## CASTERS SPEED "BOMARC" ASSEMBLY

Part of America's first line of defense is the U.S. Air Force "Bomarc" supersonic area-defense missile, made by Boeing Airplane Company, Seattle, Washington.

This behind-the-scenes picture shows how Bassick casters aid installation of Bomarc's vital tail-pipe assembly.

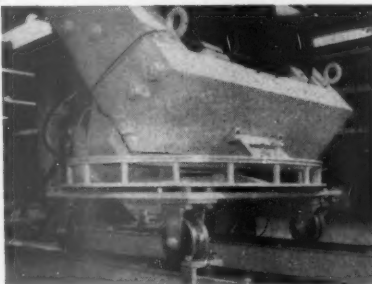
Casters used here: Popular "H99" on the dolly in the background—the largest-selling high-quality truck caster on the market; and Bassick's heavy-duty "S99" in the background, supporting main missile structure. Bassick positioning jacks hold the parts, at the touch of a toe, in the exact position required for efficient work.

## "GROOVED-WHEELS" HELP ROLL RESEARCH AHEAD

Here's a novel application for extra-heavy-duty Bassick grooved wheel casters:

The casters provide flexible, easily controlled movement for a 6,000-pound electromagnet, used in advanced research at Pennsylvania State University, University Park, Penna.

The angle-iron track structure, on which the grooved-wheels ride, provides a controlled path for the scientific apparatus, saves floors, and makes for easy rolling.



Note rigid casters on one track, swivel casters on the other, to prevent binding. Can you use this idea in your plant for especially heavy loads?

## SEE YOUR BASSICK DISTRIBUTOR

... he will be glad to recommend casters to solve your materials-handling problems—new or replacement—and he carries a broad selection of casters in stock for immediate delivery.

## DID YOU KNOW

... that Bassick, the world's largest caster-maker is also the world's largest manufacturer of office chair tilt-control mechanisms?

THE  
BASSICK COMPANY  
BRIDGEPORT 5, CONN.  
IN CANADA:  
BELLEVILLE, ONT.



## Some Cost-Cutting Can Be Painless

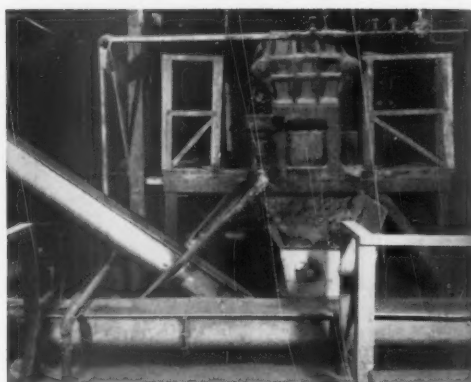
Materials-handling costs, usually 30% of production costs, are among the easiest costs to cut in a plant that's caught in the well-known profit squeeze. And Bassick casters, position locks, and wheel brakes help you save two ways: (1) you improve operations efficiency by better mobilization and utilization of equipment, better product handling; (2) you cut maintenance costs on casters, dollies and equipment, and floors.

1.41



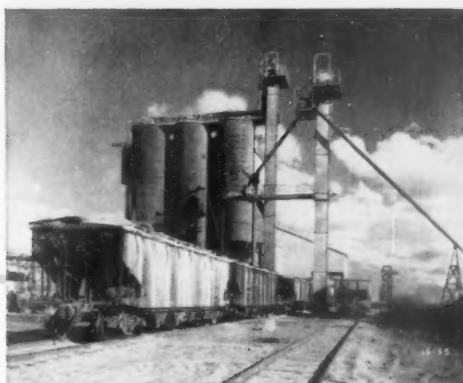


by conveyor belts



by spiral conveyors

## If you move materials



by bucket elevators



by scraper conveyors

### **JEFFREY** offers you

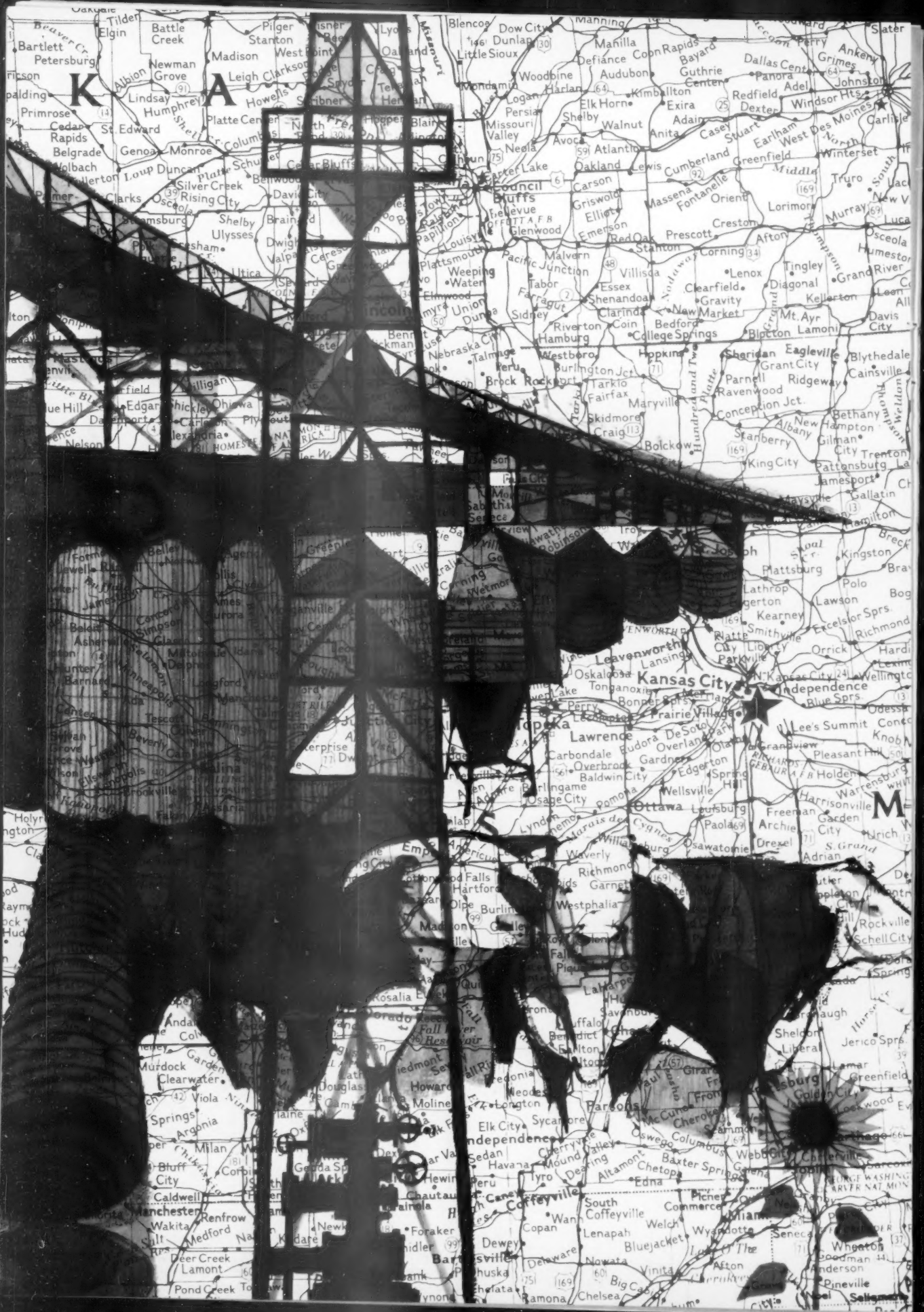
equipment incorporating the know-how gained in three-quarters of a century of studying and solving material-handling problems. Today, in thousands of plants throughout the world, Jeffrey conveying equipment is depended upon to maintain high production schedules, lighten the burden of labor and reduce operating costs.

Write for literature describing Jeffrey material-handling and processing equipment. For high quality parts matching those originally installed on your equipment, get in touch with a nearby Jeffrey distributor or The Jeffrey Manufacturing Company, Columbus 16, Ohio.



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67 years of service to the Industrial Middle West



## INLAND STEEL IS HERE

This... is a sweeping territory. It embraces the Panhandle and the northern plains of Texas—the rolling hills of western Missouri—the limitless vistas of Oklahoma, the golden fields of Nebraska and Kansas, Denver and even a corner of Arkansas. Within its boundaries lie cities and towns whose names made pioneering history. Here, is the Eisenhower Museum and the Truman Library, John Brown's cabin and the grave of Buffalo Bill. Here the Pony Express was born. Here, immense herds of cattle pounded through to northern markets. Here, the Indian watched the coming of the white man—and here, man learned to conquer the ravages of merciless windstorms and the devastation of the dust bowl.

Today this is a land of gushing oil and a tremendous oil industry, richly producing farms and a vigorous business life. Today, the area erects great bridges, oil derricks, storage tanks, corn cribs, grain bins and driers; produces culverts, electronic pumping equipment, trailers, tandems, sucker rods, and pipe to span a nation. Today the territory's farming methods have changed from the power of horses to the thundering horsepower of modern farm machinery.

*One of a series depicting market areas served by Inland • Art by Don Neske*

And today, Inland feeds steel and more steel into the ever-hungry maw of this amazingly expanding territory.

To the thousands of businessmen and industrialists throughout the territory, Inland is an old friend—a name as familiar as one's next-door neighbor. For Inland has been *here* for all these many years—growing as the territory's industries developed—contributing its knowledge and experience—sharing in the life of the territory.

Now... Inland experience—bred, developed and tested in the very states which make up this vast territory—is at the service of every manufacturer. For Inland is more than a name—more than a source of steel. Inland is a living part of each of these states. Their growth is Inland's growth. Their future is Inland's, too.

### INLAND STEEL COMPANY

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Kansas City • Milwaukee • New York • St. Louis • St. Paul

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## STAINLESS STEEL JEWELS make facsimiles by the million!

**OHIO RUBBER** can, and regularly does produce 100,000 *identical* rubber parts per day from one set of production tooling. The jewel-like precision of the self registering molds shown above—actual size—is a key factor in ORCO's high speed, high accuracy, continuous molding process.

**AUTOMATIC INTEGRATION** of processing steps which are usually handled

separately eliminates variables—provides precise control for achieving the ultimate in product uniformity. RUBBER PARTS up to 1½" in diameter and 1" in thickness produced by this process are distinguished by uniformity, minimum flash and precision tolerance of  $\pm .003$ ".

**QUANTITY REQUIREMENTS** involving not less than 500,000 parts proves

best for this new process.

"**DO YOU** use small precision molded rubber parts by the million?", if so, the full story of ORCO "CUSTOMEERED" Continuous Molding is yours via free Bulletin CM-100. Send for your copy today to see how custom molded, precision rubber parts can be produced in volume—at less cost.

MP-160



**THE OHIO RUBBER COMPANY**

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A DIVISION OF THE EAGLE PICHER COMPANY



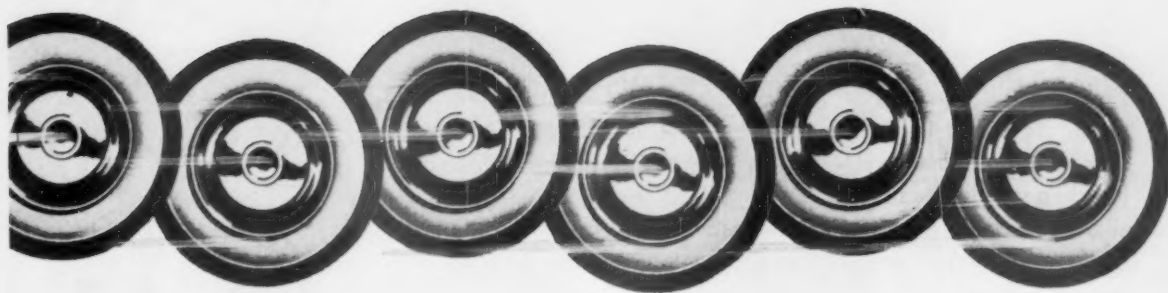
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Purchasing Agents across the country confirm the

# OK in Oakite

when they look for availability of cleaning compounds



When availability of a cleaning compound is important to your production or maintenance needs—it is good to know that Oakite carries stocks in 57 warehouses throughout the country. From the warehouse nearest you, your local Oakite man can take care of your requirements quickly and efficiently.

Too, count on the Oakite man for personal service. But count also on his spe-

cialized knowledge. Ask him how you can economize with more efficient cleaning methods, more effective materials. And ask him about the results of latest cleaning research . . . facts on time and cost-saving mechanized equipment . . . the benefits of materials *designed* to do the job.

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#### IT'S GOOD PURCHASING POLICY TO ASK OAKITE ABOUT:

- Aluminum Cleaners, Etchants
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- Barrel Finishing Compounds
- Chemical Sterilization
- Conversion Coatings
- Electrocleaners
- In-Place Cleaning Heat Exchangers
- Plant Maintenance Cleaning
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MARCH 27, 1961



For More Facts About Ad  
on Following Page Write in No. 175→

37

# YOU **SAVE MOST** WITH LIGHTWEIGHT PIPING WHEN YOU SAVE WITH TUBE-TURN WELDING FITTINGS AND FLANGES

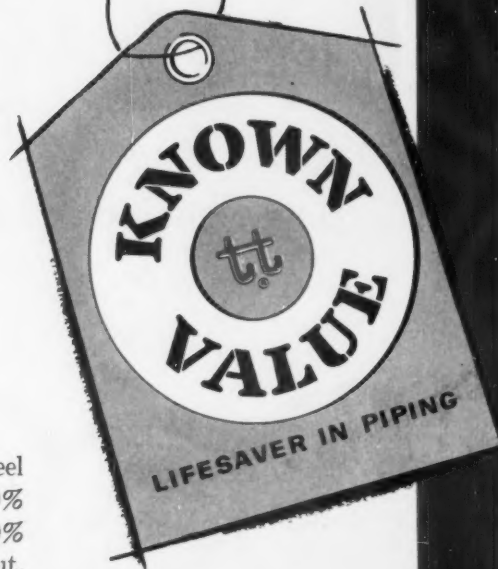
Process piping systems designed with new lightweight carbon steel piping have scored impressive cost reductions. Users report 30% savings in pipe costs alone. Lightweight piping weighs 20% to 50% less than standard wall carbon steel pipe . . . it's easier to handle, cut, align, weld and support . . . can be installed 25% faster. Lightweight piping also provides greater flow area, saves on pumping costs.

Tube Turns paced this piping progress by developing the first complete line of lightweight fittings and taper face flanges. Forged from seamless carbon steel pipe, TUBE-TURN lightweight fittings feature uniform wall thickness and true circularity . . . assures perfect pipe-to-fitting alignment, permits field cutting of odd angles, too.

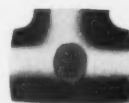
TUBE-TURN 125 lb. lightweight forged steel taper face flanges provide three times the sealing capacity of ordinary flanges . . . eliminates the hazards of breaking cast iron or semi-steel valves, fittings, and equipment. TUBE-TURN lightweight taper face flanges cost less, weigh less, and take less storage space.

If you are planning lightweight piping systems, be sure you specify TUBE-TURN lightweight piping components for maximum savings, performance and dependability. Look for the famous "tt" trademark when you buy. It's your guarantee of quality . . . the mark of *known value*. Write today for Bulletin TT942D-251 TUBE TURNS, Louisville 1, Kentucky.

"TUBE-TURN" and "tt" Reg. U.S. Pat. Off.



45° Elbow



Straight Tee



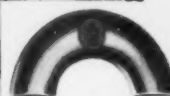
Concentric Reducer



90° Elbow



Cap



180° Return

TUBE-TURN Light Weight Fittings are available in sizes  $\frac{1}{2}$ " through 24" — in schedule 10 and API-5L wall thicknesses.



TUBE-TURN 125 lb. Light Weight Taper Face Welding Neck Flanges are available in sizes of 2" through 24".

## TUBE TURNS

Division of **CHEMETRON** Corporation



### **LIFESAVER For The Men Who Design Piping**

Tube Turns offers not only the most complete line of properly engineered lightweight piping components for utmost flexibility in planning any piping installation, but a wealth of technical data and able engineering assistance without counterpart anywhere in the world. Standardizing on TUBE-TURN piping components saves time and trouble.



### **LIFESAVER For The Men Who Buy Piping**

The world's most complete line of lightweight fittings and taper face flanges permits every specification to be met without compromise or delay. A fully responsible Tube Turns Distributor is as near as your telephone to give prompt delivery of *all* your needs from *one* source on a *single* order. Saves time, paperwork, multiple checking, piecemeal deliveries and the inevitable problems of divided responsibility. You *save* money when you standardize on TUBE-TURN piping components!



### **LIFESAVER For The Men Who Install Piping**

Time is money in the assembly of a welding piping system. TUBE-TURN lightweight piping components do not require remanufacture or compromises . . . or the delays that result from rejections. They are uniform, precision-engineered for easy, time-saving installation. And you can put them in and *forget* them because they are dependable. TUBE-TURN piping components cost less because they save more in every way!

**TUBE-TURN Light-  
weight Fittings And  
Taper Face Flanges Are  
Stocked By And Sold  
Exclusively Through  
Authorized Distributors.**

# Information For Your Catalog Files

## ABRASIVE BELT GRINDERS

Catalog No. 100 describes abrasive belt grinders. Contains details and gives examples of parts produced. Includes specifications on size, weight, speeds, and electrical features.

**Eastern Machine Screw Corporation**

Write No. 1 on Information Card—Page 32

## ADJUSTABLE SPEED DRIVES

Bulletin 2900 outlines a line of adjustable speed drives for applications in the  $\frac{3}{4}$  to 2500 hp drive range. The six-page catalog describes four types of drives and gives details on available ratings, speed ranges, type enclosures, and associated controls.

**Louis Allis Company**

Write No. 2 on Information Card—Page 32

## BARREL FINISHING

A 96-page booklet that describes various barrel finishing processes. Form 501 includes recommendations of various abrasive shapes and sizes for different applications, case histories of actual uses, descriptions of all types of finishing equipment available, discussion on compounds and their effects, and operation procedures.

**Norton Company**

Write No. 3 on Information Card—Page 32

## BLOWERS

Bulletin S88-A describes how rotary positive displacement blowers provide constant metered quantities of gas or air, even against varying pressures. The two-color, 12-page catalog explains operating principles and discusses advantages. Includes dimensional charts, drawings, photographs, and a table.

**Sutorbilt Corp.**

Write No. 4 on Information Card—Page 32

## CASTERS

A 16-page bulletin providing information on five standard series of casters. Catalog No. 1750 has data in tabular form that covers wheel diameter and face, model number, rated capacity, and overall height.

**Rapids-Standard Company, Inc.**

Write No. 5 on Information Card—Page 32

## INDUSTRIAL FASTENERS

Form 2449 describes a line of standard precision industrial fasteners—including socket screw products, pressure plugs, locknuts, spring pins, dowel pins, and steel collars. The eight-page bulletin details basic data on types, sizes, threads, and plating. Photos, cutaway drawings, tables, and sketches supplement the text.

**Standard Pressed Steel Co.**

Write No. 6 on Information Card—Page 32

## MATERIALS HANDLING

A catalog reviewing the materials handling function. Discusses and compares various commodities used for materials handling equipment and demonstrates the application and life expectancy of each. Illustrated with in-use photographs.

**Spaulding Fibre Company, Inc.**

Write No. 7 on Information Card—Page 32

## PLASTIC PRODUCTS

Bulletin 611 explains typical applications of plastic products with controlled properties that can be manufactured to MIL specifications. The four-page catalog includes specialized items like radomes, plastic antennas, parabolic dishes, and microwave lenses. Has tables giving typical mechanical properties of glass-fibre-base polyester laminates and rigid polyurethane foam.

**Polystrostructures, Inc.**

Write No. 8 on Information Card—Page 32

## SILICONES

Publication CDS-276 describes the properties of silicones. The 16-page brochure covers extreme heat protection, low temperature flexibility, good electrical properties, and resistance to thermal shock. The two-color bulletin is illustrated with photos and charts.

**General Electric**

Write No. 9 on Information Card—Page 32

## STAINLESS STEEL

A four-page brochure describing a new bright annealed stainless steel finish. Covers Sharonart, coated products, forging quality, and high tensile, spring, and special alloys available.

**Sharon Steel Corporation**

Write No. 10 on Information Card—Page 32

## STRAIGHT GRINDERS

Bulletin SG contains specifications for air-powered straight grinders and buffers. Two types, internal and external bladed, are described—together with spindles, grinding wheels, wire brushes, cone wheel adapters, and hoses.

**Rotor Tool Co.**

Write No. 11 on Information Card—Page 32

## STRUCTURAL TUBING

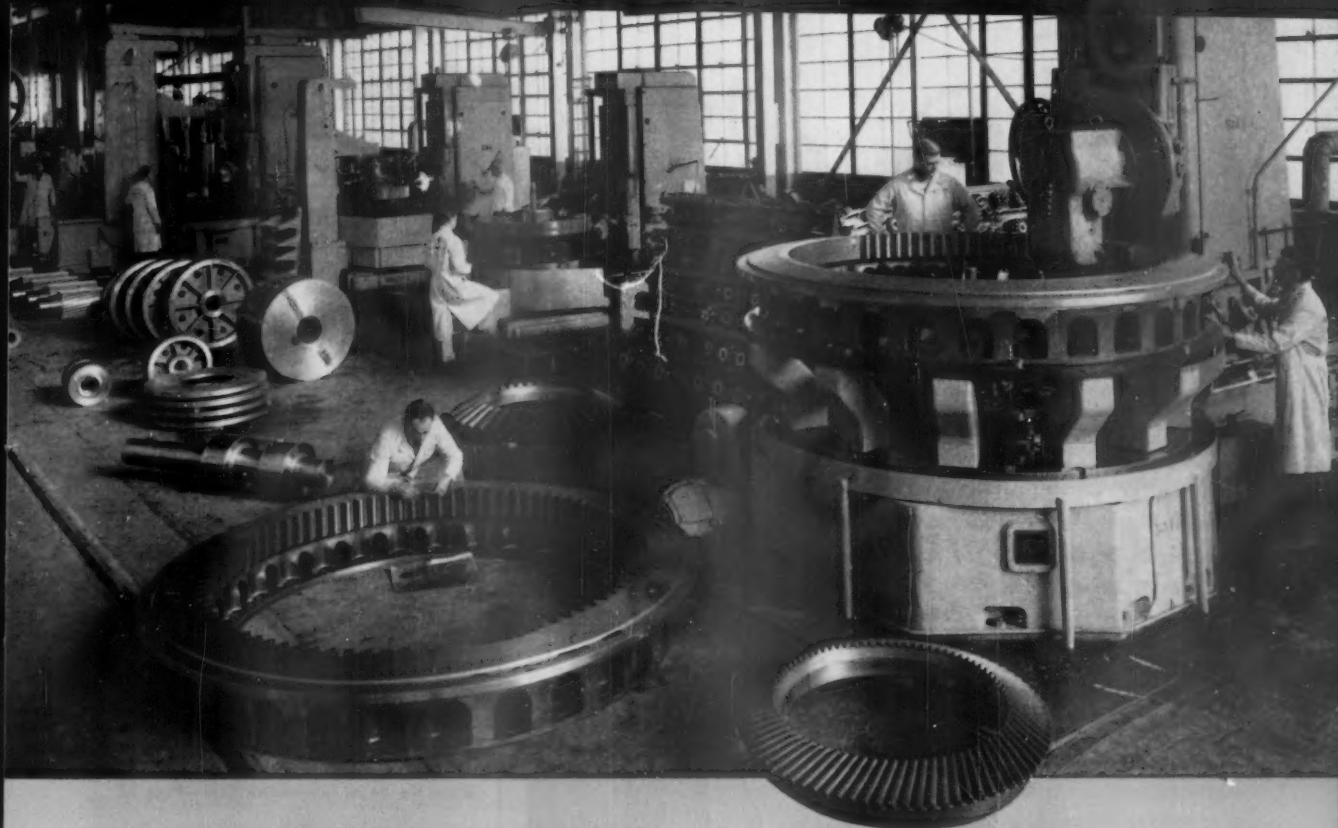
Technical bulletin 12-3 provides engineering data on square, rectangular, and round steel tubing for structural applications. Covers construction of buildings, machinery, furniture, fixtures, appliances, truck bodies, racks, and supports. Lists advantages of structural tubing over other steel shapes.

**Joseph T. Ryerson & Son, Inc.**

Write No. 12 on Information Card—Page 32

For More Facts About Ad  
on Facing Page Write in No. 176→





## UNCHALLENGED IN QUALITY ILLINOIS GEARS



Testing Herring-  
bone Gear With  
Integral Shaft  
Pinion




Power Equip-  
ment for Testing  
Large "Coniflex"  
Bevel Gears and  
Pinions

With every ILLINOIS GEAR comes the extra dimension of perfection in quality...quality that has remained unchallenged throughout the world.

Unchallenged because ILLINOIS GEAR goes far beyond the established standards in maintaining relentless, painstaking control of quality that extends through every step of manufacture to final delivery.

And...no matter how great the quantity, one gear or 10,000 or more...skilled craftsmen equipped with the world's finest and most modern tools and precision quality control equipment, make sure that these high standards of perfection are rigidly maintained in producing each and every gear.

For gears that are made right with quality as the first consideration—depend on ILLINOIS GEAR.

Look for this mark  ... the symbol on finer gears

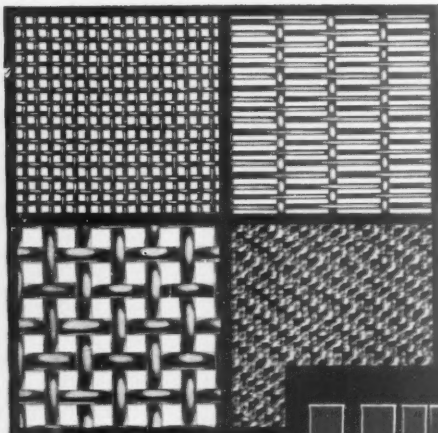


*Gears for Every Purpose ... one gear or 10,000 or more*

# ILLINOIS GEAR & MACHINE COMPANY

2108 NORTH NATCHEZ AVENUE • CHICAGO 35, ILLINOIS

# Top Quality!



FOUNDED 1856

## LUDLOW -SAYLOR

and



### WIRE CLOTH & SCREEN

Ludlow-Saylor and Star screen and cloth can be woven from any steel alloy including stainless, high-carbon and oil-tempered; Monel, Nichrome, Incoloy or other patented alloy; brass, bronze, copper, aluminum, nickel and virtually any other ferrous or non-ferrous metal that can be drawn into wire.

Furnished in sheets, continuous lengths, slit ribbons, cylinders, cones, discs, rings or any other form. Ask for quotations.

**Whatever the problem**—corrosion, contamination, abrasion, pressure, vibration, heat or some other troublesome condition—Ludlow-Saylor or Star has in stock, or will weave to your specification, a screen or cloth to meet your most critical requirement.

**You get more**—in durability and accuracy, in better product quality and uniformity, increased production, economy and value, with Ludlow-Saylor and Star wire cloth and screen. But *prices are strictly competitive!*

Be specific—order by name—insist on what you order.

#### QUICK SHIPMENT

from St. Louis, Houston, Los Angeles

#### Write For Catalog

LUDLOW-SAYLOR WIRE CLOTH CO., 4369 WEST CLAYTON AVE., ST. LOUIS 10, MO.  
STAR WIRE SCREEN & IRON WORKS, INC. (L-S Subsidiary)

SUNSET AVE. & VALLEY BLVD. • CITY OF INDUSTRY (L. A. COUNTY), CALIF.

BIRMINGHAM ★ CHICAGO ★ DENVER ★ HOUSTON ★ PITTSBURGH  
512 N. 18th St. 6261 West Grand Ave. 1530 Carr St. 5638 Harvey Wilson Dr. Union Trust Bldg.

For More Facts Write No. 177 on Information Card—Page 32

## Catalog Files

### SWITCHES

Data Sheet 186 covers standard door interlock switches. The four-page sheet includes three new series: the 13AC, the 8AC, and the 9AC. Has photographs, mounting dimension drawings, mechanical characteristics, electrical ratings, and pricing information.

**Minneapolis-Honeywell Regulator Co.**

Write No. 13 on Information Card—Page 32

### TEMPERATURE CONTROLS

Brochure MC-195 describes temperature controllers and indicators. The eight-page bulletin gives details of three models of the line. Includes electrical and mechanical specifications, available modifications, and illustrated descriptions of various major features.

**Fenwal Incorporated**

Write No. 14 on Information Card—Page 32

### TURRET LATHES

A bulletin illustrating and describing precision turret lathes. The catalog emphasizes one-motion control and an automatic indexing turret which passes over the top of the double tool cross slide.

**Rivett Lathe & Grinder, Inc.**

Write No. 15 on Information Card—Page 32

### ULTRASONIC CLEANING

Bulletin 23 describes ultrasonic cleaning applications and equipment. The eight-page, illustrated catalog describes features of tank transducers and ultrasonic generators for use in large and small scale degreasing operations. Includes exact specifications of all electrosonic models.

**Phillips Manufacturing Company**

Write No. 16 on Information Card—Page 32

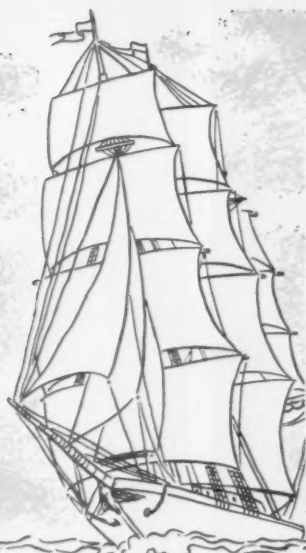
### VALVES AND FITTINGS

Catalog #60 illustrates and describes valves and fittings. The 464-page bulletin has an enlarged metals and materials section, includes product weights, and has capacity tables for safety and relief valves. The engineering data section has information on the flow of fluids.

Write No. 17 on Information Card—Page 32

# Why Rust-Oleum is different—

and what this difference,  
backed by 35 years of industry proof,  
means to you!



A Sea Captain  
developed it . . .

Industry  
proved it!

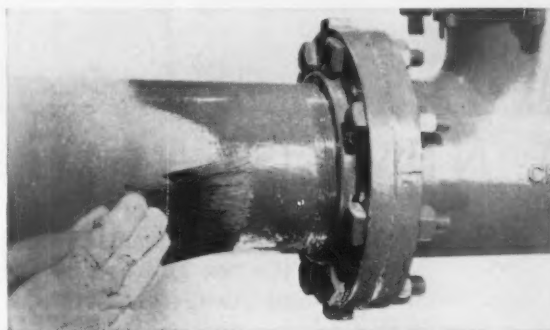
**T**he original Rust-Oleum formula was developed nearly fifty years ago by Sea Captain Robert Fergusson, who became intrigued with the rust-stopping qualities of fish oil early in his career. Creating a special treatment for the fish oil, he used the specially-processed fish oil as the vehicle in combination with fine rust-inhibiting pigments. The result? A coating that actually stopped rust when applied directly over sound rusted surfaces, after scraping and wirebrushing to remove rust scale and loose rust. Possible, because the specially-processed fish oil penetrated the rust to bare metal. This was the birth of Rust-Oleum's exclusive 769 Damp-Proof Red Primer.

## PROVED THROUGHOUT INDUSTRY FOR OVER 35 YEARS

Today, Rust-Oleum in its many systems and colors, has been proved throughout industry for over thirty-five years. This proof by leading industrial users is your assurance of savings in time, money, and metal. Economies made possible by the fact that Rust-Oleum 769 Damp-Proof Red Primer goes right over the sound rusted metal—usually eliminating costly surface preparations. And Rust-Oleum, in its various systems, resists rain, sun, fumes, heat, weathering, chemicals, etc., for lasting beauty over the years.

## RUST-OLEUM NEW COLOR HORIZONS SYSTEM

The Rust-Oleum New Color Horizons System introduces a new coating concept to industry. It combines four important factors: (1) the ability to stop rust, (2) smart, modern color harmony, (3) the durability to last and last, (4) ease of application that saves time, money, and metal. See how this system can bring lasting beauty to your plant, machinery, equipment, pipes, tanks, structural steel, fences, etc. Write for complete information or contact your nearby Rust-Oleum Industrial Distributor. He maintains complete stocks for prompt service.



# RUST-OLEUM®



There are imitations,  
but only one Rust-Oleum.  
It is distinctive as  
your own fingerprint.

# STOPS RUST!

### ATTACH TO YOUR LETTERHEAD

**Rust-Oleum Corporation**  
2548 Oakton St., Evanston, Illinois

Please send me the following at no cost or obligation:

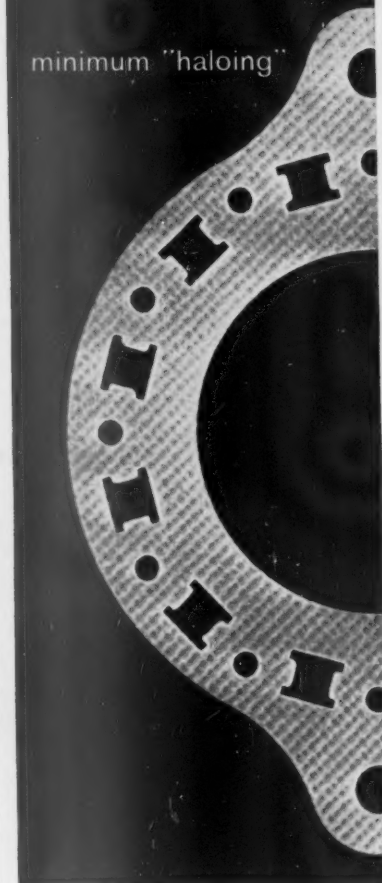
- ☐ New Color Horizons Systems Catalog featuring 110 actual color standards and 69 photo applications.
- ☐ Free test sample of Rust-Oleum 769 Damp-Proof Red Primer to be applied over sound rusted surface.
- ☐ Results of radioactive tracing study on Rust-Oleum fish oil penetration.



zero burnout time



minimum "haloing"



at  
no  
extra  
cost

## A NEW GLASS EPOXY LAMINATE

Companies buying laminates which must meet critical specifications will welcome this new glass fabric epoxy, CDF Grade 614, available plain or copper-clad. Flame retardant, it also offers excellent resistance to moisture and trichloroethylene vapor—making it ideal, for example, for critical ground and airborne circuitry.

In addition, CDF 614, identified by its opacity and distinctive tan color, rates high in fabricating qualities: takes a cold punch with virtually no "haloing." It's the latest example of CDF technical competence that solves laminated plastics problems in a wide variety of applications.



**CONTINENTAL-DIAMOND FIBRE**

CONTINENTAL-DIAMOND FIBRE CORPORATION, NEWARK, DELAWARE • A SUBSIDIARY OF THE ~~Bush~~ COMPANY



# INDUSTRIAL RETAINING RING PRICES REDUCED UP TO 51%



Series 1000, Series 3000 and Series 3100 Industrial Retaining Ring prices—in quantities up to 100,000—have been greatly reduced.

Thanks to modern, efficient production methods you can now get these Industrial Retaining Rings—either pre-stacked or bulk packed—at new, low prices . . . and pay less for pre-stacked rings than you have been paying for bulk packed. Reductions apply to standard materials and finishes.

Use this coupon to send for your new, revised IRR Price List.

## INDUSTRIAL RETAINING RING COMPANY

Please send me, free, a copy of the new 1961 IRR Price List—61P.

\_\_\_\_ I would also like to have your representative call.

Name \_\_\_\_\_ Title \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_



*Originators of modern retaining ring dispensing*

**INDUSTRIAL RETAINING RING COMPANY**

57 Cordier Street, Irvington 11, New Jersey

For More Facts Write No. 180 on Information Card—Page 32

"This chart survey saved us work, time and money!"



*"I used to order recording charts as frequently as we needed them. But not now. This simple survey helped me place a single long-term order for GC charts with automatic deliveries spaced to our requirements."*

You, too, can stop fussing with lots of little orders, for lots of different recording charts, from lots of different suppliers. Send for a GC Chart Survey Form. Merely list chart numbers and the quantity you use. Return your completed Survey to GC and they will send you free chart samples for your engineers to check and a firm price for filling all your chart requirements. If it looks good you can then place one order covering several months or even a full year. GC will make automatic deliveries to meet your needs.

In addition to saving time and clerical work, GC charts cost less because they are produced in such large quantities so efficiently. And their quality is guaranteed by GC, the world's largest recording chart specialists.

Start saving—and get quality and service. Write today for your chart survey forms.



DISTRIBUTED BY:

**TECHNICAL SALES CORPORATION**

189 Van Rensselaer St., Buffalo 10, N. Y.

A SUBSIDIARY OF:

**GRAPHIC CONTROLS CORPORATION**  
Buffalo 10, New York

For More Facts Write No. 181  
on Information Card—Page 32

## Letters To The Editor

### AN IMPORTANT POINT

Dear Sir:

I am very interested in the discussion of shipping dates versus delivery dates and which should appear on the purchase order. This topic was first brought up in your "Letters To The Editor" column in the 9/26/60 issue and was expanded upon in your 1/16/61 issue.

This question, as with most questions, has no single answer. If the buyer demands the routing prerogative, then he should assume responsibility to the extent of specifying the shipping date.

If the buyer leaves the routing prerogative to, or it is demanded by, his supplier, then the supplier should take the responsibility of meeting a specified delivery date.

The reason for a buyer selecting one course over the other can be stated rather simply: It is either a habit or the result of a formal study. The buyer then draws satisfaction from his rationalization that "this is the only thing to do."

R. T. Flynn  
Buyer  
The Toni Company  
St. Paul, Minnesota

### PERSONNEL REQUIREMENTS

Dear Sir:

The article, "How Much Purchasing Manpower," which appears in "Purchasing's Manual of Time and Money-Saving Ideas" has attracted our interest.

At the present time, manning studies are being conducted to determine proper personnel requirements for base procurement offices throughout the command.

A standard workload per buyer is a realistic base from which to apportion time. However, we are interested in correlating standard workload findings, with money expended for salaries. An overhead cost figure such as this may be valuable as a cross check with a determined standard workload.

If you have information relating standard work load per buyer

to overhead costs we would be very interested.

William T. Haneline  
Chief, Procurement Division  
Strategic Air Command  
Offutt Air Force Base, Nebr.

• Such studies are seldom based on dollars. It is more common to use the number of purchase orders, number of parts, number of change orders, or some similar measurement. J. V. Terhune, Ordnance Department of General Electric Co. in Pittsfield, Mass., has made detailed studies of this sort. The publication which Mr. Haneline mentions is a compilation of important articles previously published in PURCHASING Magazine. It is offered to new subscribers only.

### EXCEPTION TO CARTOON

Dear Sir:

A recent issue of PURCHASING Magazine carried a cartoon depicting what was supposed to be a typical buyer (Jan. 30, 1961, page 42). I am sure you are aware of the very strenuous educational efforts being made by the National Association of Purchasing Agents and quite a number of its hard working officers and committeemen.

We have been able to get credit courses in more than 200 universities and colleges and have a proposal before our members that involves spending several hundred thousand dollars of additional funds for educational purposes.

While most of us enjoy a joke, we feel that the cartoon you published is the composite of everything bad that has been said about purchasing agents for many years and certainly doesn't help the program we have embarked on to improve the ability and stature of the members of our profession.

I am sure that I speak for the majority of our members when I indicate that we believe as an organization we have grown up

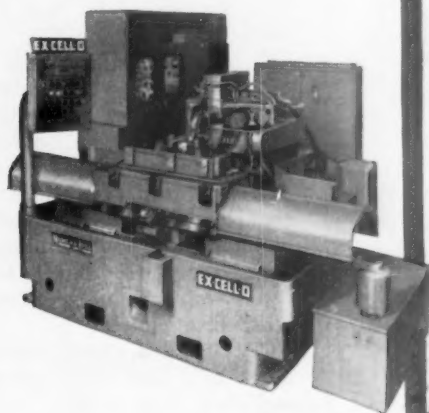
(Please turn to page 48)

# Looking for precision parts for your product? Look to the builder of the world's most accurate production machine tool!

Ex-Cell-O, builder of the "world's most accurate production machine tool," is staffed and equipped to put into parts for your products the same degree of machining skill, modern heat treat methods, and advanced assembly and inspection techniques that go into our own precision products.

Whatever your requirements in the size, material or quantity of prototype or production parts and assemblies, your job will receive the extra attention to detail and scheduling which many of our customers have relied on for more than 40 years.

Contact your local Ex-Cell-O Representative for details, or send your prints or specifications to Ex-Cell-O. Your inquiry or request for quotations will receive prompt attention.



Precision parts and assemblies, ground worms



Miscellaneous production parts, drill jig bushings



Machined forgings, hardened and ground railroad details



Tape-controlled Numerical Precision Contouring Machine is controllable to .000025", has template scribing-grinding head and interchangeable turning-boring head.

EX-CELL-O FOR PRECISION

PRECISION MACHINE TOOLS • GRINDING AND BORING SPINDLES • CUTTING TOOLS • RAILROAD PINS AND BUSHINGS • DRILL JIG BUSHINGS • JIG AND FIXTURE COMPONENTS • TORQUE ACTUATORS • CONTOUR PROJECTORS • GAGES AND GAGING EQUIPMENT • GRANITE SURFACE PLATES • COMPUTER PRODUCTS • AIRCRAFT AND MISCELLANEOUS PRODUCTION PARTS • ATOMIC ENERGY EQUIPMENT • DAIRY AND OTHER PACKAGING EQUIPMENT

Machinery Division

**EX-CELL-O**  
CORPORATION  
DETROIT 32, MICHIGAN

60-49



# ALLMETAL® Stainless Steel FASTENERS IN STOCK

**FOR ROCKET-FAST  
SHIPMENT**

AN • MS • COMMERCIAL SPECIFICATIONS

## *The story behind ALLMETAL LEADERSHIP*

No long countdowns here. Allmetal stainless fasteners are stockpiled in advance — ready to go on your order. Over 30 years' experience at your command — prompt service, quality production.

**THOUSANDS OF TYPES OF STAINLESS FASTENERS IN STOCK.** Our reputation for immediate shipment is made possible by huge inventories of standard fasteners.

**HARD-TO-GET FASTENERS STOCKED FOR DELIVERY.** Many stainless fasteners considered non-standard throughout the industry are carried in Allmetal's stock for immediate shipment.

**UNMATCHED KNOW-HOW FOR "SPECIALS."** Special fasteners and parts fabricated to your exact requirements on extremely short notice — in all metals.

Write, on your letterhead, for our comprehensive 132-page illustrated catalog of "world's largest stock of stainless steel fasteners".



MANUFACTURERS OF STAINLESS STEEL FASTENERS SINCE 1929

# ALLMETAL®

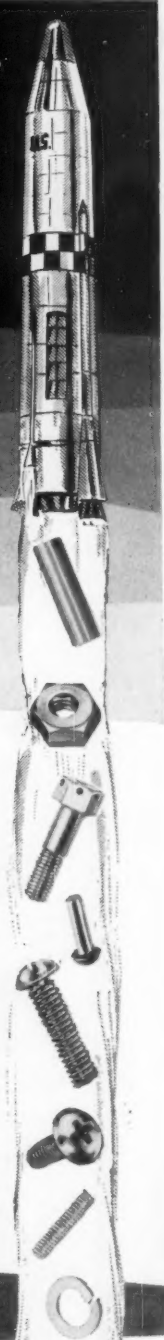
## SCREW PRODUCTS CO., INC.

GARDEN CITY, N.Y. PI 1-1200  
NEW YORK, N.Y. FI 3-5800  
NEWARK, N.J. MA 3-1117  
BOSTON, MASS. LA 3-6119  
CHICAGO, ILL. AV 2-3232  
CULVER CITY, CAL. WE 3-9595

821 STEWART AVE., GARDEN CITY, L.I., N.Y.

MIDWEST SALES OFFICE  
6424 West Belmont Ave., Chicago 34, Ill.

WEST COAST OFFICE & WAREHOUSE  
5822 West Washington Blvd., Culver City, Calif.



For More Facts Write No. 183 on Information Card—Page 32

## Letters

(Continued from page 46)

and would like to be recognized as respected professional people.

Perhaps it would be in order to suggest that you consider putting in another sketch in an early issue depicting all the good things that you can think about that might be attributable to the members of the purchasing profession.

K. A. Cruise  
Material Manager  
Bendix Corporation  
Kansas City, Missouri

• We have, of course, run many millions of words about the good things being done by members of the purchasing profession. We regret that anyone took offense at the cartoon. It was published simply to provoke a bit of good-natured jousting between purchasing and sales.

## CANDID OPINION

Dear Sir:

May I address this to "Name Withheld" [see page 37, Letters to the Editor, Jan. 30 issue].

I cannot understand how a man can be so adamant in his feelings about gifts that he states: "I am one of those persons who feel that this has no part in business relations." Yet, this man doesn't have guts enough to let you use his name.

I honestly believe that these articles on gift-giving are completely out of all proportions as to their implications. I agree with you when you say that the position of PURCHASING Magazine is that it would be impossible to eliminate the practice altogether, so the next best thing is to label it for what it is, just another cold-blooded gimmick.

Let's forget about making so much of a fuss about gift-giving and go back to work.

H. M. Zimmerman  
Kearfott Division  
General Precision, Inc.  
Little Falls, New Jersey

• The decision to withhold the original correspondent's name was the Editor's, not the writer's.



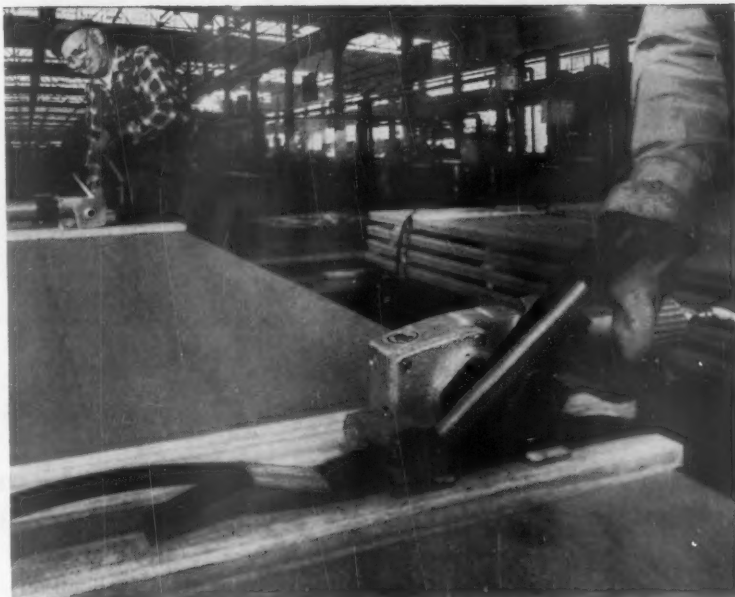
IT'S BOUND TO BE BETTER WITH  STEEL STRAPPING TOOLS

# New air-powered tool speeds strapping of boxcar parts at Pullman-Standard

There is no more burdensome hand-operated strapping done at Pullman-Standard division of Pullman Incorporated. They now automatically flat strap steel boxcar flooring and steel compartmentizer doors with the new USS pneumatic Model 7300 stretcher. A slight twist of the control knob on this heavy-duty machine automatically stretches strapping to a pre-set tension. Result: A tighter, more compact bundle with no shifting or damage in transit.

The portable Model 7300 is built for long service, little upkeep. It's lightweight, simple to operate. With the Model 7300, you can have a uniform strapped package every time. There's no repackaging because of loose straps. This automatic machine can unitize and palletize any size shipment faster and better than any previous method.

Learn how the Model 7300 can upgrade your strapping operation. For more information, send the coupon.



**U. S. Steel Supply  
Division of  
United States Steel**



U. S. Steel Supply  
U. S. Steel Corporation  
208 South LaSalle Street  
Chicago 4, Illinois

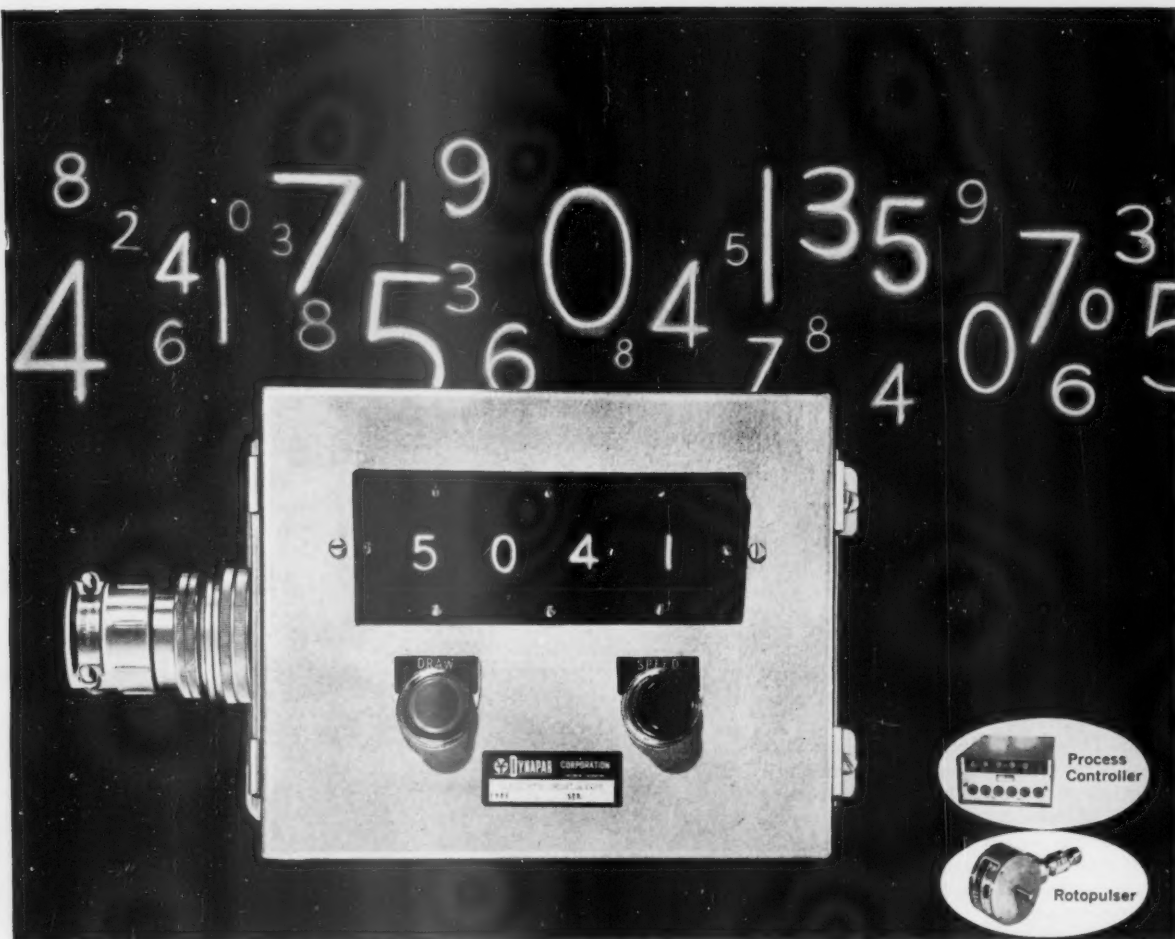
Please send me more information on the new automatic USS Model 7300 Stretcher

Name

Company

Address

City  Zone  State



## NOW...Louis Allis offers DYNAPAR\* Digital Control Systems!

**Louis Allis can supply accurate digital controls designed to  
Industrial standards for a wide variety of continuous process lines**

For any production process, Louis Allis can furnish not only motors, drives, and controls, but also digital monitoring equipment to provide visual readout and process control signals.

The answer is DYNAPAR Digital Control — a highly accurate digital logic system that can count, measure, totalize, indicate, time, or control depending on the requirements of the application. Digital systems are ideally suited for high speed counting — accurate measurement of speed and draw — automatic cutting-to-length — automatic positioning — and many other applications.

Dynapar's digital devices utilize precise pulses, and eliminate the drift inaccuracy inherent in magnitude-measuring analog systems. There's no need for constant

calibration or adjustment. Pulses are reliably provided by rugged ROTOPULSERS, highly stable sensing and pulse generating devices—visual indication is obtained by easily-read luminous direct numerical readouts. Control functions are accomplished by a variety of special devices tailored to specific operations. All DYNAPAR equipment features the most modern solid-state transistorized circuitry to provide long-life operation without maintenance.

Investigate to see how Louis Allis-Dynapar equipment can increase production and cut waste by automating your process. Call your local Louis Allis District Office, or write to The Louis Allis Co., 439 E. Stewart Street, Milwaukee 1, Wisconsin.

\*Dynapar Corporation is the electronic subsidiary of The Louis Allis Co.

## LOUIS ALLIS

MANUFACTURER OF ELECTRIC MOTORS AND ADJUSTABLE SPEED DRIVES

For More Facts Write No. 184 on Information Card—Page 32

For More Facts About Ad  
on Facing Page Write in No. 185→  
PURCHASING

# hoover quality balls

... PEARLS  
OF INDUSTRY



You would look a long time to find a component that does so much for end products, that is made so accurately, yet costs so little as a ball. Of course, the rounder and smoother it is, the better the ball does its job.

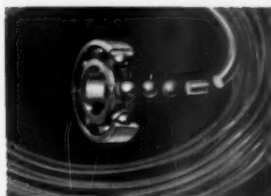
In Hoover *Micro-Velvet* balls, made of the finest chrome alloy steel, sphericity is measured in millionths of an inch . . . surface finish is microscopically smooth. Gem-like perfection makes *Micro-Velvet* balls ideal for use in bearings and many other precision products.

Millions of balls are produced each month in Hoover Ball Division plants in Middletown, Ohio and Erwin, Tennessee. In addition to chrome steel, Hoover makes balls of carbon steel, stainless steel, brass, bronze, monel and other metals in sizes from  $\frac{1}{16}$ " to  $4\frac{1}{2}$ " for a wide range of industrial applications. Specialized manufacturing techniques and exceptional quality control methods maintain high Hoover Quality standards.

*Micro-Velvet* and Hoover *Honed* are Hoover Trademarks.

**Hoover**  
BALL DIVISION  
P.O. Box 381, Middletown, Ohio  
*hoover ball and bearing company*

**hoover CONTROLS hoover quality FROM START TO FINISH**



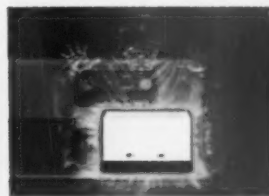
High quality wire from which balls are made is produced by Hoover's Cuyahoga Steel and Wire Division.



It's easier to strike a match on plate glass than on the smooth finish of a Hoover *Honed* bearing raceway.



*Micro-Velvet* balls are used in precision bearings produced by Hoover and other leading bearing makers.



Hoover quality control methods include non-destructive electronic inspection of bearing components.



## Purchasing People In The News

**Ralph O. Keefer**, vice president in charge of purchasing for **Aluminum Company of America**, Pittsburgh, Pa. has recently retired after 44 years service with Alcoa. **Thomas O. English**, Alcoa's



Ralph O. Keefer

general purchasing agent, succeeds Mr. Keefer.

Mr. Keefer joined Alcoa in 1917 as an operating apprentice at its Massena (N. Y.) works. He was engaged in engineering and operating capacities until 1935, when he became purchasing agent. Named general purchasing agent for Alcoa and its subsidiaries in 1937, he was elected a vice president in 1958. He assumed his present title two years ago. Mr. Keefer has played a key role in the advancement of purchasing as a profession; has distinguished himself for his achievements in the field of standardization; and has written numerous articles for *PURCHASING Magazine*. He is a past president of both N.A.P.A. and the Purchasing Agents' Association of Pittsburgh. In 1958 he received the J. Shipman Gold Medal award. He is a chemical engineering graduate of Syracuse University.

**Robert F. Lhota** has been appointed a senior buyer for Tapco Group purchasing, **Thompson Ramo Wooldridge Inc.**, Cleveland, Ohio. He will direct all procurement activities for the Bomarc

auxiliary power unit program. For ten years prior to joining TRW in 1959, he was active in procurement work with the Cadillac Tank Plant Division of General Motors Corporation. He graduated from the University of Cincinnati in 1950 with a BS degree in industrial management. He is a member of the National Association of Purchasing Agents.

**William J. Straccia** became purchasing agent for **Planetronics, Inc.**, Allenton, Pa. Mr. Straccia was formerly a buyer for the Magnetic Windings Division of Essex Wire Products Company. He is a graduate of Moravian College.

**Emil J. Houser** has been named general purchasing agent of **Thermoid Division, H. K. Porter Company, Inc.**, Pittsburgh, Pa. He will also serve as P.A. for the **Trenton Works** of the division. Mr. Houser replaces **T. J. Gorman** who recently resigned. Mr. Houser



Emil J. Houser

joined the former Thermoid Company in 1948. He will be responsible for policies and procedures in the procurement of raw materials supplies and services for the Thermoid Division. He is a member of the Purchasing Agents Association of Trenton, N. J.

**Irving W. Tuttle** has been appointed director of purchases for **Ludlow Papers and Ludlow Plastics**, Needham Heights, Mass. Mr. Tuttle has been assistant director



I. W. Tuttle

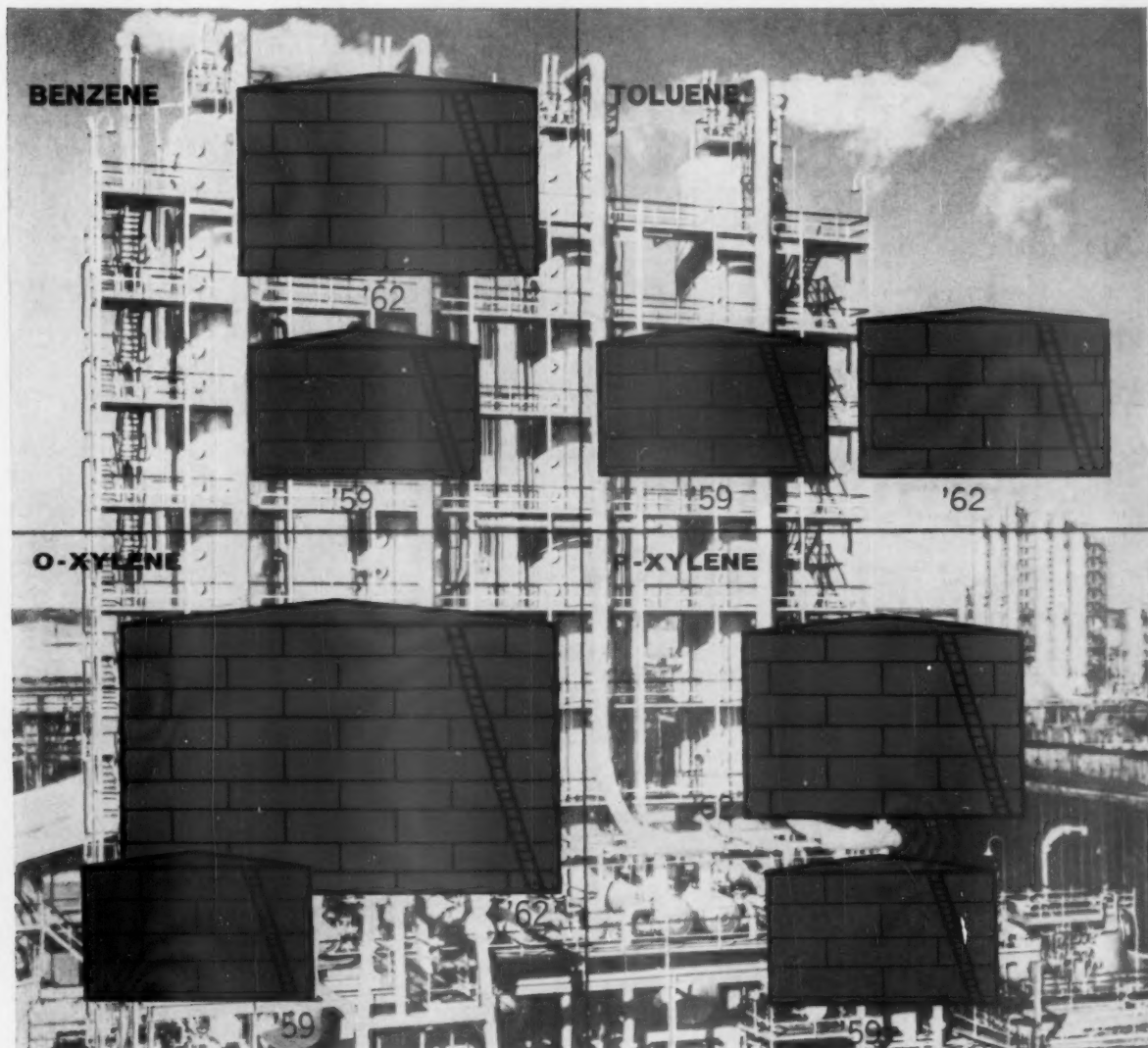
of purchases for Hudson Pulp and Paper Corporation. He is a graduate of Dartmouth College and a member of the New York Purchasing Agents Association.

**Louis J. De Rose**, management consultant and editorial consultant for *PURCHASING Magazine*, has been appointed to the **Military Procurement Advisory Committee of the United States Senate**. The committee, under the chairmanship of Senator George Smathers (D., Fla.) is made up of representatives of industry and government. It will advise the Senate's Procurement Subcommittee and draft recommendations on existing laws, regulations, and practices of the military departments.

The committee will study such areas as advertised vs. negotiated procurement, renegotiation, bid and price analysis, qualification of bidders, proprietary rights, etc.

**SEE PAGE 138 FOR MORE  
PURCHASING PEOPLE IN  
THE NEWS**

## WHAT'S NEWS IN ENJAY SUPPLY

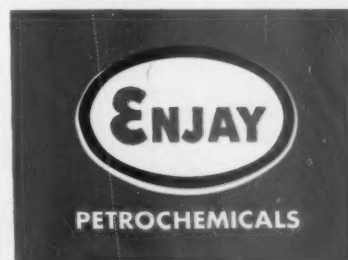


## Enjay is increasing facilities to meet your needs!

As one of the world's largest chemical marketers, Enjay is investing in expanded production facilities to meet the increasing demand for aromatic hydrocarbons. Here is the Enjay expansion program to meet demands. This is one more reason why Enjay is a dependable source of supply.

	CAPACITY	
	1959	1962
BENZENE million gal/yr	45	79
TOLUENE million gal/yr	32	55
ORTHOXYLENE million gal/yr	6	24
PARAXYLENE million lb/yr	65	105

For information on these or other Enjay products write 15 West 51st Street, New York 19, New York.



EXCITING NEW PRODUCTS THROUGH PETRO-CHEMISTRY

**ENJAY CHEMICAL COMPANY**

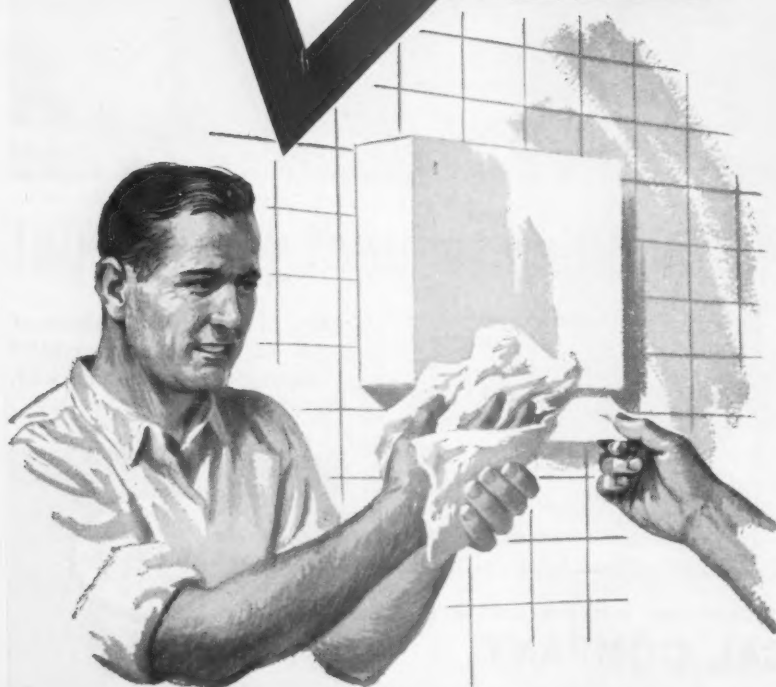
A DIVISION OF HUMBLE OIL & REFINING COMPANY

For More Facts Write No. 186 on Information Card—Page 32

MARCH 27, 1961

53

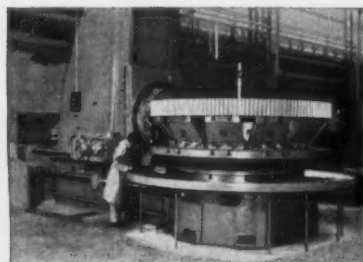
We could  
have saved  
that trouble—  
if we had  
bought from  
Phillie Gear



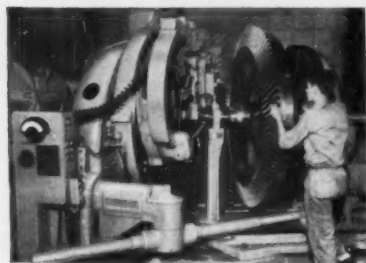
For More Facts Write No. 187 on Information Card—Page 32

## THESE NEW FACILITIES MEAN BETTER GEARING . . . BETTER SERVICE

How do you judge gearing performance? Greater load carrying capacity? Reduction in noise? Or perhaps longer life? Take the measure of Phillie Gear equipment any way you wish . . . and you'll find that today, more than ever before, you get greater accuracy in a tougher product. Quality that won't quit. To cite just one reason . . . our 180,000 square foot, ultra-modern plant in suburban Philadelphia is filled with precision production equipment. Lets us put our own exacting standards of engineering and manufacturing fully into practice. Gives us absolute control of our product and its ultimate performance.



**New Hobber for Heavy Gears.** Custom built to our own exacting specifications. Produces large gears up to 165" diameter—makes them accurately and at reduced costs because of faster cutting methods possible.



**New Spiral Bevel and Straight Bevel Gear Generator** is one of the largest ever made. Produces high capacity gearing in minimum time with greatest accuracy attainable in this type of gearing. For complete details, write on your company letterhead for catalog G-127.

**philadelphia**  
**GEAR CORPORATION**

King of Prussia, Pennsylvania  
(Suburban Philadelphia)

For More Facts About Ad  
on Facing Page Write in No. 188→

PURCHASING





INDUSTRIAL DEPARTMENT

## Dayton Industrial Products Co.

*Division of Dayco Corporation*

Melrose Park, Ill.

Major Implement Company Saves Hundreds of Dollars  
Where Slippage Formerly Ruined Belts

### These are the Facts

<u>Application</u>	Multiple drill used to gang-drill holes in engine blocks.
<u>Drive Conditions</u>	Requires high co-efficient of friction to combat slippage. Previous V-Belt life, 1-2 months.
<u>Cog-Belt Results</u>	Still going strong after 6 months.
<u>Cog-Belt Profit</u>	\$500 and more.

YOU DON'T HAVE TO RE-SELL DAYTON COG-BELTS

See BELTING in the yellow pages of your telephone directory for the name of your local Dayton distributor or write  
Dayton Industrial Products Co., Industrial Dept., Melrose Park, Ill.

## NEW SUPER-TOUGH ORE HAULER USES

# N-A-XTRA

## HIGH-STRENGTH STEEL TO CUT DEAD WEIGHT AND STRETCH PAYLOAD CAPACITY

This Lectra Haul M-55, made by Unit Rig and Equipment Co. of Tulsa, is now working in the open pit iron mines in Minnesota's Mesabi range. In bone-freezing  $-40^{\circ}$  weather, it can stand up to the shuddering shock of 55 tons of drop-loaded iron ore, climb a 6% grade at 8.6 mph then dump those 55 tons in a crashing, grinding 18 seconds. The quarry body that takes this loading impact and dumping abrasion in sub-zero temperatures is made of N-A-XTRA high-strength steel, with X-A-R Abrasion Resistant Steel for extra hardness and toughness in wear areas. N-A-XTRA also forms the structural members of the complete unit.

Why N-A-XTRA? Because, pound for pound, it's nearly three times stronger than ordinary steel. That means it's strong enough to absorb severe punishment without constant maintenance, and light enough to handle the highest possible payload. In fact, the Lectra Haul payload is almost as much as the net vehicle weight itself.

N-A-XTRA and X-A-R are doing the job where only the strongest steels will do. Easily formed and welded, they are making products stronger, lighter, longer lasting. N-A-XTRA fully quenched and tempered steel is available in four levels of minimum yield strengths, from 80,000 to 110,000 psi. X-A-R steels are supplied in hardnesses from 360 to 400 BHN (or, by agreement, in a range between 265 and 500 Brinell). For full technical information, write Great Lakes Steel Corporation, Product Development, Dept. PM-1, P.O. Box 7310, Detroit 2, Michigan.



A PRODUCT OF

## GREAT LAKES STEEL

Detroit 29, Michigan

### N-A-XTRA AND X-A-R STEELS ARE AVAILABLE AT THESE STEEL SERVICE CENTERS

Benedict-Miller, Inc.  
Lyndhurst, New Jersey

Joseph Demsey Co.  
Cleveland, Ohio

Ducommun Metals & Supply Co.  
Los Angeles, California

Interstate Steel Co.  
Evanston, Illinois

Lockhart Iron & Steel Co.  
Pittsburgh, Pennsylvania

Marsh Steel & Aluminum Co.  
Kansas City, Missouri

O'Neal Steel, Inc.  
Birmingham, Alabama

Salt Lake Hardware Co.  
Salt Lake City, Utah

A. C. Leslie & Company, Ltd.  
Montreal, Canada





Look for the STEELMARK  
on the products you buy; place  
it on the products you sell.

*Lectra Haul M-55; made by  
Unit Rig and Equipment Co., Tulsa, Okla.  
224,000 lbs. GVW  
110,000 lbs. capacity  
700-hp. diesel engine  
4 wheel-mounted electric traction motors*

*Design note: Bottom, sides and front of the Lectra Haul quarry body were fabricated of N-A-XTRA 100 (100,000 psi minimum yield strength) from plates  $\frac{1}{2}$ " thick and reinforced with cold-formed channels of  $\frac{3}{8}$ " thick N-A-XTRA 100. Wear areas of bottom, side and front slopes were made of X-A-R Abrasion Resistant Steel from plates  $\frac{3}{4}$ " thick, 388 Brinell hardness. Fabrication followed standard shearing, gas cutting and welding procedures.*

Great Lakes Steel is a Division of **NATIONAL STEEL CORPORATION**



# Riegel SUPERLEAVING PAPER...

Soft as a kitten  
for polished metals



Highly polished metals like stainless steel are easily scratched by dirt particles. To protect the surface many industrial plants now use Riegel's SUPERLEAVING, a special lightweight interleaving paper made with unusual freedom from lint, lumps, dirt and shives. It has high tear and tensile strength, as well as neutral pH. Chlorides and reducible sulphur, which may cause corrosion, are closely controlled.

This is another of Riegel's 600 specialty papers and laminations now serving industry in products, in production, in packaging. If you have a problem or a requirement that paper may solve, write Riegel.

## — SEND FOR SAMPLES —

Riegel Paper Corporation  
Box 250, New York 16, New York

Send complete data on  
SUPERLEAVING to:

Mr. \_\_\_\_\_  
Co. \_\_\_\_\_  
Address \_\_\_\_\_

For More Facts Write No. 190  
on Information Card—Page 32

## FOB—"filosofy of buying"



Works Buyer Burris Campbell (center) handled sales and counseled employees when International Harvester sold houses in a company town. Here he discusses plans with Ted and Monnie Mae Kaylor.

A P.A. with a rare ability is Burris Campbell, works buyer at International Harvester's coal mines in Benham, Kentucky. When IH decided to change Benham over from a company-owned to a privately-owned town by selling company houses to its employees, it put Campbell in charge of the whole operation. Campbell must have done a good job: 280 houses were put up for sale with first choice for purchase going to the current occupant. There were no turn downs.

THE GOOD word on purchasing continues to be passed among the people:

The Vancouver, B. C., public library has a special section devoted to purchasing in its Business Library. Included on its shelves are regular issues of this magazine and a bound volume of some of our outstanding articles of previous years.

The Purchasing Agents Association of Southeastern Massachusetts has defrayed the cost of placing PURCHASING Magazine in the public libraries of New Bedford and Fall River, according to

*The New England Purchaser.* Charlie Hinkley, Acushnet Process Co., association president, said, "The members feel this is an excellent way to spread the public relations story of purchasing and make the magazine articles available to readers outside the profession."

SOMEWHERE, Andy Lehrbaummer, P.A. for the City of Milwaukee, must have read one of those articles that say, "A good purchasing agent is a good salesman too," and taken it seriously. Here are some of the sales Andy has made recently in his capacity as official disposer of scrap and surplus:

14,000 ft. of used fire hose (bought by contractors, pier operators, etc.);

100,000 empty .38 caliber casings (to ammunition manufacturers);

15 tons of crumpled quonsets (that's what it says here, anyway);

1 elderly mare named "Dolly," who was the last plow horse in

the city bureau of forestry's nursery. A Waukesha County farmer bought Dolly and put her out to pasture. "I still drop in there occasionally to see how she's getting along," says Andy.

Lehrbaummer says some city employees are even toying with the idea of retrieving the lead pellets fired into Lake Michigan during police department target practice and selling them for scrap.

Which only proves that you can always make some extra money if you'll get the lead out.

ONE OF THE MORE encouraging developments in industrial purchasing is the desire and ability of purchasing agents to assist their engineering and research people in searching out new materials and processes and the specialty suppliers that provide them. In a few months, technically minded buyers—and the technical people in their plants—will get a big assist from a new publication recently announced by Conover-Mast Publications. The monthly magazine, *International Science and Technology*, will appear in January 1962.

ONE of our editors received a call at 4:55 one afternoon just as he was putting on his boots and preparing to venture out into the cold. A timid voice on the other end inquired softly "Can you help me? I'm relatively new to purchasing. What does MRO mean?"

The query was promptly answered (maintenance, repair, and operating equipment, in case you thought we don't know) and the questioner voiced a quick whispered "Thank you" before hanging up.

Just another of our many services to readers, you know.

RIGHT IN the middle of one of the worst storms New York ever had, we received a release from Snow Shoe, Pa.

MARCH 27, 1961

**WIRE FILTER CLOTH**

**WIRE SPACE CLOTH**

**WIRE MESH CLOTH**

**CALL ON NEWARK  
When Purchasing**

**PARTS FABRICATED  
WITH WIRE CLOTH**

**TESTING SIEVES**

**TESTING SIEVE SHAKERS**

Make NEWARK your source of supply for Wire Cloth and Wire Cloth Products. We weave all of our own cloth from which we fabricate parts for our customers...thus insuring both quality of cloth and accuracy of construction.

Newark Wire Cloth is available in all standard widths, all meshes, all commercial metals...the Newark line is a complete line even up to 400 mesh cloth. And if your problem is one of parts design, our engineers will be glad to aid. May we quote on your requirements?

**NEWARK**  
for ACCURACY


**Newark Wire Cloth  
COMPANY**

351 VERONA AVENUE

NEWARK 4, NEW JERSEY

For More Facts Write No. 191 on Information Card—Page 32

For More Facts About Ad  
on Following Page Write in No. 192→



**OHIO** Round Tubing  
To 7-1/2" OD x .375" wall





**OHIO Square Tubing**  
To 6" x 6" x .259" wall

**OHIO Rectangular Tubing**  
To 7-1/2" major diameter x .259" wall  
Typical 4" x 6" x .259" wall section illustrated

## **Announcing Mechanical — Pressure — Cold Drawn OHIO QUALITY WELDED STEEL TUBING in larger sizes...heavier wall thicknesses**

New sizes and heavier wall thicknesses of Ohio Quality Welded Steel Tubing (up to 7 1/2" OD) now parallel the sizes of famous Ohio Seamless Steel Tubing. That means — now more than ever — there's a type and size of Ohio tube to fit your special requirements exactly. And since we make both types, we're in a position to recommend the best type for your own particular needs. Ohio Tubing — either welded or seamless — is just "made to order" for your product.



### **OHIO SEAMLESS TUBE**

Division of Copperweld Steel Company • **SHELBY, OHIO**  
Seamless and Electric Resistance Welded Steel Tubing • Fabricating and Forging

Cut along line and send air mail to save time.

**RUSH** me, without obligation, latest information on new larger sizes and heavier wall thicknesses of Ohio Welded Steel Tubing.

Name \_\_\_\_\_ Title \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_







*Irus 902 is bright yellow—helps you spot leaks quickly.*

## **BULLETIN:**

### **Shell reveals how Irus 902, the bright yellow hydraulic fluid, holds water in oil to reduce fire danger in your plant**

**Shell forced Irus® 902 Hydraulic Fluid through a 0.145-inch orifice at 1000 psi pressure. A 3000-degree flame was thrust into the streaming fluid. Irus 902 did not ignite.**

**Read the remarkable story of Irus 902—why it resists fire—and how it can help you protect personnel, plant and equipment.**

**I**rus 902 Hydraulic Fluid is an ingenious combination of oil and water. The water is encased in a film of oil. In technical terms, it is a stable water-in-oil emulsion.

*But unlike other emulsions, Irus 902 has optimum stability. This is vitally important. It means that Irus Fluid will retain its lubricating qualities far longer than most fire-resistant oils—and will not allow the water to separate out.*

Result: the water stays in the oil, ready to snuff a fire if needed.

#### **Other Advantages**

**1. Irus 902 cools off systems.** Because of its high rate of heat transfer and

high heat capacity, Irus 902 allows hydraulic systems to run cooler.

**2. Irus 902 resists thickening and thinning.** Viscosity of Irus 902 protects pump parts during the entire working cycle—from cold start-up to hot, continuous operation.

**3. Irus 902 saves gaskets, packing, hose.** It's gentle to nonmetallic parts as well as metal.

**4. Irus 902 resists foaming.** It does not hold captive air. If air enters, Irus 902 quickly releases it.

For complete details about changing over to Shell Irus 902, contact your nearest Shell Industrial Products Representative. Or write: Shell Oil Com-

pany, 50 West 50th Street, New York 20, N.Y.

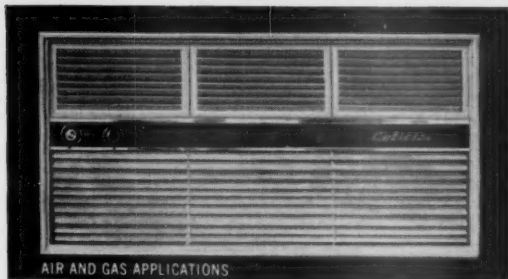
#### **A special message to manufacturers of hydraulic equipment**

Shell Irus 902 makes an excellent initial fill. It is available anywhere in the U.S.A. Its quality is consistently high. All Irus 902 must meet Shell's strict quality control specifications.



**A BULLETIN FROM SHELL**  
—where 1,997 scientists are working to provide better products for industry.

## An example of Avisco Rayons in Industry



AIR AND GAS APPLICATIONS



CREAMS AND LOTIONS



INDUSTRIAL APPLICATIONS



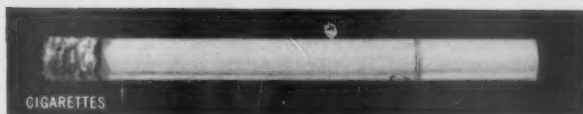
PETROLEUM PRODUCTS



AUTOMOTIVE APPLICATIONS



FOODS AND DRINKS



CIGARETTES



BEER AND WINE

## What do you want to filter better?

Many people who make or use filters are discovering that they can do a better job of filtering for less money with filters of Avisco® rayon. The diameter of man-made Avisco rayon fibers is so closely maintained that filter micron ratings can be held to meet most filtration specifications. So, whether you're interested in the filtering of liquid foods, oils, air, lacquers, paints, smoke, water, liquors or lotions—whether you are manufacturing filters by the wet or dry system—look into Avisco rayon fibers. Fill out and mail in the Quick Reply Coupon.

### QUICK REPLY COUPON

7-9

Industrial Merchandising Division  
American Viscose Corporation  
350 Fifth Avenue, New York 1, N.Y.

Please contact me about Avisco Rayons for use in the following application: \_\_\_\_\_

Name \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

# AVISCO® RAYON

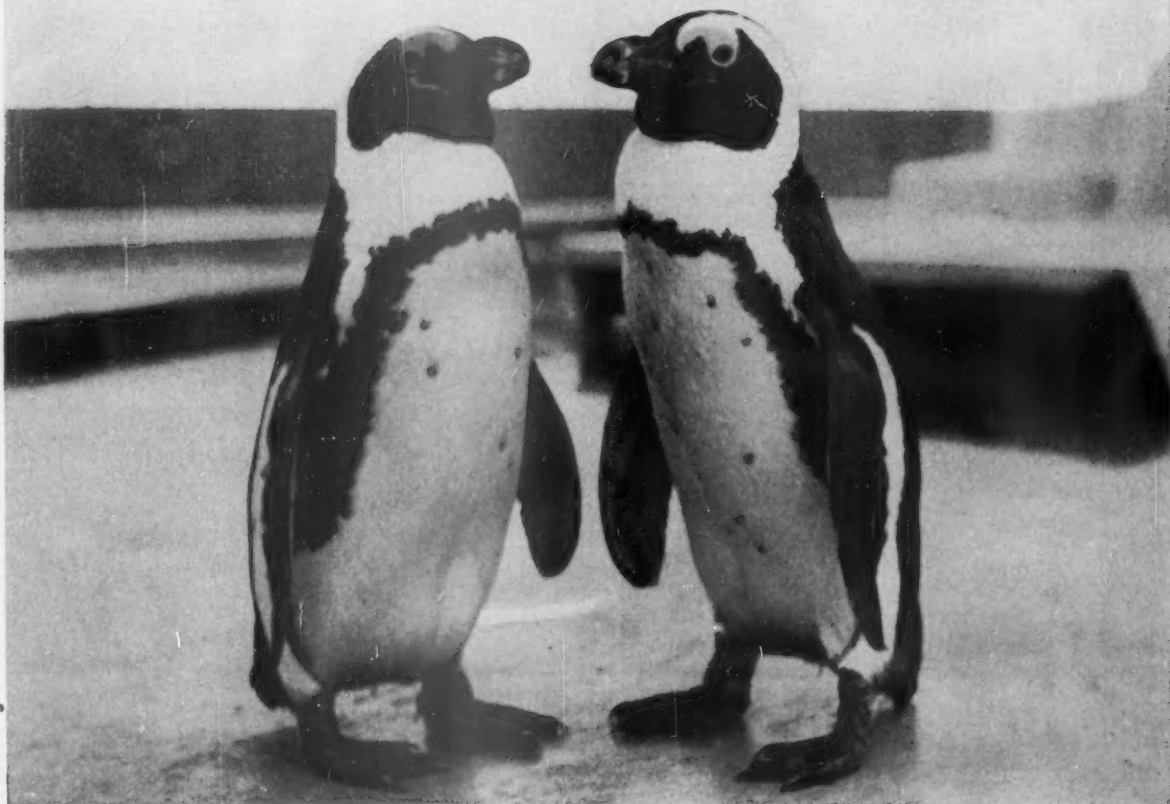
AMERICAN VISCOSE CORPORATION, 350 Fifth Avenue, New York 1, N.Y.

For More Facts About Ad  
←on Facing Page Write in No. 193  
MARCH 27, 1961

For More Facts Write No. 194 on Information Card—Page 32

**"Who makes the most  
uniform magnetic cores?"**

**"Magnetic Metals,  
of course!"**



When you're faced with an order for magnetic cores with closely matched characteristics, tape-wound Centricores® will fill the bill exactly. They're the most consistently uniform cores available anywhere.

Centricore uniformity begins with the careful screening of raw materials for the exact magnetic properties you need, is maintained in winding through use of special machines of our own design, and completed with annealing under rigidly controlled conditions. The rugged design of the leak-

proof Centricore cases permits use of a thinner gage aluminum that shaves fractions of an inch off their size—fractions that can add up to precious inches when you want to scale down component dimensions. *Centricores are the slimmest magnetic cores on the market.*

With Centricores—and all Magnetic Metals products—comes expert, interested help with any specification problems you may have. And you can depend on prompt delivery from either our East or West Coast plants. Write or call today.

**MAGNETIC  
METALS**



**MAGNETIC METALS COMPANY**

Hayes Avenue at 21st Street, Camden 1, N.J.

853 Production Place, Newport Beach, California

transformer laminations • motor laminations • tape-wound cores  
powdered molybdenum permalloy cores • electromagnetic shields





## Calendar of Coming Events

- April 4-6.** Materials Handling Institute: Joint Industry Meeting, Sheraton-Blackstone Hotel, Chicago, Ill.
- April 6-7.** American Society of Mechanical Engineers and Society for the Advancement of Management: Management Engineering Conference, Statler-Hilton Hotel, New York, N. Y.
- April 7-8.** District One, National Association of Purchasing Agents: Victoria, British Columbia, Canada.
- April 10-13.** American Management Association: 30th National Packaging Exposition, Lakefront Exposition Hall, Chicago, Ill.
- April 11-14.** Copper & Brass Warehouse Association: Annual Meeting, Broadmoor Hotel, Colorado Springs, Colo.
- April 17-21.** American Welding Society: Spring Meeting, Coliseum, New York, N. Y.
- April 17-21.** Business Equipment Exposition: Office Equipment Manufacturers Exhibits, Coliseum, New York, N. Y.
- April 29-May 3.** National Screw Machine Products Assn: National Meeting, Somerset Hotel, Boston, Mass.
- May 3-5.** National Association of Educational Buyers: 40th Annual Convention, Chase Park Plaza Hotel, St. Louis, Mo.
- May 7-11.** National Office Management Association: Sheraton Jefferson Hotel, St. Louis, Mo.
- May 24-25.** American Iron and Steel Institute: Annual Meeting, Waldorf-Astoria Hotel, New York, N. Y.
- May 24-26.** Electronic Industries Association: 37th Annual Convention, Pick-Congress, Chicago, Ill.
- May 25-26.** National Society of Business Budgeting: Statler Hilton Hotel, Dallas, Tex.
- May 29-30.** Canadian Purchasing Agents Association: 36th Purchasing Conference and Products Display, Royal York Hotel, Toronto, Canada.
- June 4-7.** National Association of Purchasing Agents: Annual Convention, Conrad Hilton Hotel, Chicago, Ill.
- June 5-9.** Society of the Plastics Industry: 9th National Plastics Exposition, Coliseum and Commodore Hotel, New York, N. Y.
- June 14-17.** Drop Forging Association: Annual Meeting, Greenbrier, White Sulphur Springs, W. Va.
- July 18-20.** Western Plant Maintenance and Engineering Show: Pan Pacific Auditorium, Los Angeles, Calif.

SUBSCRIPTION CORRESPONDENCE AND CHANGE OF ADDRESS: Write to Circulation Department, PURCHASING Magazine, 205 East 42nd Street, New York 17, N. Y. Please give title and company affiliation in all correspondence. Notify us promptly of any change of address. Be sure to give old as well as new address; include postal zone number, and new company name and title. Enclose address label from a recent issue, if possible. Since mailing labels are addressed in advance, please allow 3 weeks for change to become effective.



# PETERSON STEELS, INC.

Union, N. J. • Wethersfield, Conn.  
Detroit, Mich. • Melrose Park, Ill.

For More Facts Write No. 196  
on Information Card—Page 32



**WANT ?  
A LIFT !**

INLAND package engineers can give you one fast. They've helped lift many of America's leading manufacturers to the profit side of the ledger by streamlining their packaging. They are highly trained specialists who know how to determine what you need in a package—and *only* what you need—to assure the safe delivery of your product. And they know how to drive straight past inefficient

packing operations, unnecessary shipping weight and use of space, excessive handling costs, and profit-stealing breakage.

• • •

INLAND specializes in the manufacture of corrugated shipping containers . . . is fully qualified to give you the best answers to all of your packaging problems. Let an INLAND package engineer give you a lift. A telephone call will do it!



## **INLAND CONTAINER CORPORATION**

**Corrugated Fiber Containers**

General Offices: Indianapolis, Indiana

*Partners in Progress with American Industry*

For More Facts Write No. 197 on Information Card—Page 32

### **MILLS:**

Macon, Georgia  
Rome, Georgia

### **BOX PLANTS:**

Indianapolis, Indiana  
Middletown, Ohio  
Winchester, Virginia  
Milwaukee, Wisconsin  
Evansville, Indiana  
Detroit, Michigan  
Macon, Georgia  
Erie, Pennsylvania  
Ashtabula, Ohio  
Orlando, Florida  
Rome, Georgia  
Biglerville, Pennsylvania  
Louisville, Kentucky  
Dallas, Texas  
Chicago, Illinois  
Philadelphia, Pennsylvania  
Baltimore, Maryland  
Omaha, Nebraska  
South Haven, Michigan

## Purchasing Pointers

**TRAINING HELPS CLERKS, TOO**—A New England P.A. has found that "in-plant training" helps the girls in his department understand their jobs better. The girls spend time in the stores department and in receiving. They make "plant visits" to the die shop, the forge shop, and the machine shop. They get to know manufacturing and trade terms, and become acquainted with department heads. It all helps to make them more interested in their work and more efficient at it.

**HOW GOOD ARE YOUR FORMS?**—Here's a quickie quiz to help you get more efficiency into your paperwork: Which of your forms can be eliminated or combined? Can unnecessary data be cut out? Have you used all available space, so only one side need be printed? Has box styling been used to conserve space and eliminate unnecessary spacing on typewriter? Is all recurring information preprinted? Would a continuous form be more suitable? Is the data arranged in order of transcription to and from the form? Check yourself also on:

**LOWER PRINTING COSTS**—If the form you're analyzing is printed in colored ink, can this be changed to black ink? Can colored stock be changed to white? Does the form have to be serially numbered? Is the data printed on the opposite side absolutely necessary? Can the form be reduced in any way and still be printed in a standard size? Have numbers been substituted for department names? Have you set up an Economic Ordering Quantity system for forms?

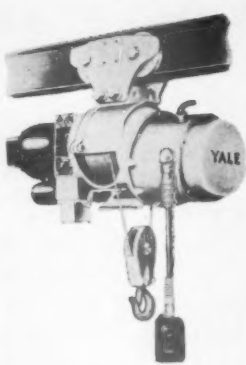
**GROUP BUYING OF FORMS**—If you're willing to buy standardized sizes of forms, you can save a nice chunk of money. Some forms suppliers will "gang" or group forms layouts from a number of customers and run them off on a rotary instead of a flatbed press, as long as customers will accept the same size, weight, color, and number of forms. Set up costs are greatly reduced, and prices are much lower than if forms were run off to special order. Economies are particularly impressive on multi-part forms run in lots of less than 5000.

**CHECK BLANKET ORDER RELEASES**—Under many blanket order systems, releases go directly from material control to a vendor. This could breed carelessness or inefficiency. Buyers should spot check releases occasionally to see that inventory levels are being maintained and business is being distributed fairly when more than one vendor is involved.





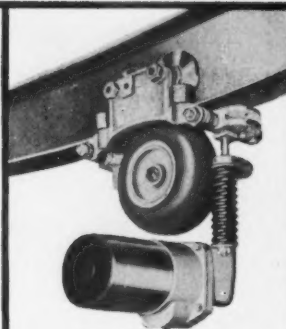
**Air Hoist**—Lightweight, compact. Explosion proof motor. Infinite speeds. Roller or link chain, pendant or pull-cable control. Capacities:  $\frac{1}{4}$  to 1 ton.



**Load King Wire Rope or Link Chain Electric Hoist**—Two brake safety feature. Weather resistant. Capacities:  $\frac{1}{4}$  to 2 tons.



**Pul-Lift**—Ratchet handle action. Self-actuating load brake. Fracture resistant safety hooks. Link or roller chain models. Capacities:  $\frac{1}{4}$  to 15 tons.



**Tractor Trolleys**—Motor driven. Push button control. Pulls any type of equipment. Capacities: Up to 5 tons.

## TRIM COSTS WITH THE RIGHT YALE HOIST FOR THE JOB

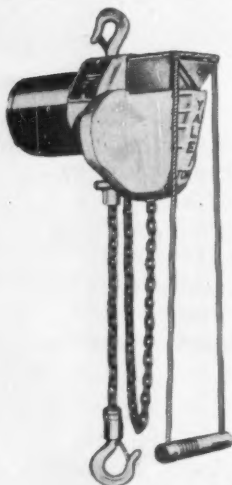
You're money ahead with the right hoist for the right job. You get the right lifting power . . . the right sturdiness to take the load . . . the right low level of maintenance costs. Yale offers you the *economy of the right equipment* . . . from a diversified range of hand and powered models . . . including models instantly available from your Yale distributor's stock. Consult him. He can help you with the right equipment for loads from  $\frac{1}{8}$  to 40 tons. And for added mobility, consult him on hand and powered trolleys.

See your Yellow Pages or write us for your distributor's name. *Yale Materials Handling Division, Dept. X-104, Philadelphia 15, Pa. A division of The Yale & Towne Manufacturing Co.*

# YALE®

INDUSTRIAL LIFT TRUCKS  
TRACTOR SHOVELS · HOISTS

YALE & TOWNE



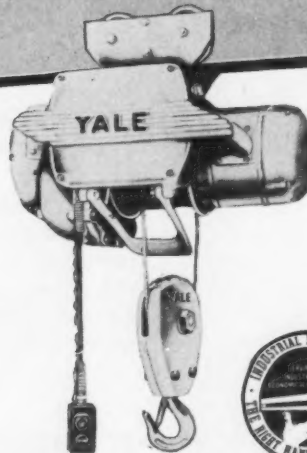
**Midget King Electric Hoist**—New link chain model picks up loads not directly under hoist. Safety limit stops. Roller chain model available. Capacities:  $\frac{1}{8}$  to 2 tons.



**Load King Hand Hoist**—Portable, highly efficient, fast hoisting. Revolutionary Synchro-matic load brake. Ball bearings on all rotating shafts. Capacities:  $\frac{1}{2}$  to 12 tons.



**Close Headroom Load King Trolley Hoist**—Adjustable, lightweight, efficient. Supplied with plain or geared trolley. Capacities:  $\frac{1}{2}$  to 12 tons.



**Cable King Electric Hoist**—Heavy duty. All types of suspension. Two brake safety. Air cooling assures long life. Capacities:  $\frac{1}{4}$  to 15 tons.





## Are You Doing Your Job?

PURCHASING MAGAZINE

MARCH 27, 1961

THE FAILURE of the Sizzling Sixties to get off the launching pad may have left some forecasters embarrassed at having been caught with their optimism overexposed. But they should be of good heart. Few responsible businessmen want to put an end to forecasting or the assorted economists who practice it. What they want is *better* forecasting, not less forecasting.

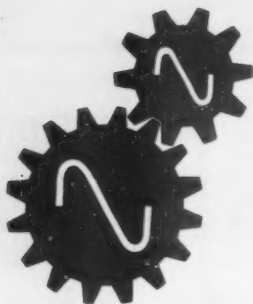
A good forecast obviously must be based on reliable information. But business doesn't seem to be making much of an effort to get the kind or amount of data it needs to chart its course. Only one out of five of the 215 manufacturing companies recently surveyed by the National Industrial Conference Board has its own staff economist. About the same number has employees who provide management with economic intelligence although they are not members of a formal economic staff. The rest rely on outside consultants, trade journals, economic letters, and the like.

It's distressing to note that not one of the companies reports that it uses the purchasing department as a source of economic data. One company has an economic council, made up of heads of various departments, probably including purchasing. But that's the extent of purchasing participation in economic affairs in those companies.

Something is wrong when all the economic information available to modern purchasing comes in one end of the department and goes out the other—or worse yet, doesn't even come into the department. In the first case, the blame can be put on either an indifferent management or an inefficient purchasing department. In the second, the fault is all with purchasing. In either case, the enterprise is being deprived of an excellent source of important economic information. An alert buyer should be able to pick up, and an alert management use, information on general price trends, supply and demand in key commodities, the level of confidence among suppliers, the labor outlook in supplier industries, new developments among competitors. In addition, a buyer can regularly pass on, with his own interpretation, the consistently accurate findings of the Business Survey Committee of the National Association of Purchasing Agents.

From past performance, it's clear that most managements won't come to purchasing for help. So purchasing must go to them. Why not start now to develop your own program of collecting economic information for your top management, finance department, or marketing research department—even for the economic staff if the company has one? Neither you nor your company can afford to ignore the basic data you should be getting as part of your purchasing job.

*Paul V. Farrell*



## How Texas Instruments Buys

*TI's fabulous success in the wild and woolly world of electronics is built on imagination and flexibility. Purchasing techniques at the Apparatus Division reflect those qualities. Project buying, close control of material movements, and work simplification keep efficiency at a peak.*

By Paul V. Farrell,  
Editor

**W**ITHOUT FAST turnaround we're lost," says Frank Wodrich, purchasing agent for Texas Instruments' Apparatus Division, Dallas, Tex.

The division is under time pressure all the way. First, it must bid promptly and accurately against numerous and resourceful competitors for defense, aviation, and federal aviation agency business. If it gets the business it must design (in many cases), build, and test highly complex equipment against tough deadlines. The armed services just don't tolerate delays in delivery of radar systems, missile and anti-missile systems, engine instrumentation, and the like. And absolute reliability is, of course, a must. Without it, speed means nothing.

### Purchasing's in at the Start

TI's purchasing methods and organization are designed to meet the challenge of that type of business. "We have to stay on top of costs, quality, and delivery of materials from start to finish," says Wodrich. Our responsibility starts

when a job is estimated. It doesn't end until the final products have been manufactured and are on their way out of the plant.

"The buyer is the key man in the whole effort. We use a project type of work assignment in which a buyer is assigned responsibility for an entire system. If we have a contract for a complete radar system a buyer is assigned to the whole job. He buys everything for it—raw material, castings, electronic gear, mechanical gear, waveguide, and anything else involved. He stays with the job—which may take anywhere from 9 months to 3 years—until the last system is shipped. He's a key man on the division team that handles that product."

The rest of the department is organized to handle the other aspects of purchasing's broad responsibility. The department has about 80 people, including traffic, receiving, warehousing, packing, and shipping personnel who are also under purchasing. All operations are controlled through three cost centers (see chart P. 71)—purchasing, material control, and

packing.

Apparatus Division's purchasing buys about 30,000 items for production, another 10,000 for general maintenance, repair and operation. No more than 10% of the total are repetitive. Last year Wodrich's group handled between 30,000 and 40,000 new orders and changes.

### Tradition Helps

Purchasing would enjoy good standing at TI just on the basis of its performance, of course. But tradition has helped, too. Board chairman Erik Jonsson served as TI purchasing agent back in the Thirties, and was president of the Dallas Association of Purchasing Agents in 1938.

Frank Wodrich came into Texas Instruments in 1944 and worked with Jonsson, at a time when the firm was just beginning its big advance in the electronics industry. He was named head of Apparatus Division purchasing a few years later.

Wodrich reports to the manufacturing manager of the Apparatus Division, one of four divi-





Organization chart shows modified materials relationships and lines of responsibility, not the management structure used in Apparatus Division TI purchasing. The chart shows organizational re-

lationships and lines of responsibility, not the importance of functions or job titles. There are approximately 80 people in the department.

sions and ten subsidiaries of the fabulously successful company. Each of the other units has a fully staffed purchasing department reporting to the general manager. Although they are organizationally independent, the division groups maintain close and

friendly relationships. Don Nugent, P.A. for the Semiconductor Division was formerly in Wodrich's department as senior buyer and the two often get together for discussion of problems.

Wodrich's department handles a complex and growing materials

job (business volume has climbed steadily: the number of purchased items has increased by 40% and requests for purchases by 83% in the past couple of years.) Some of the techniques it has developed to handle the job are described in the articles that follow.

## Purchasing-Engineering Teams Help Prepare TI Bids

**P**URCHASING at Texas Instruments' Apparatus Division is a high-powered, complex job-shop type of operation that calls for first rate buyers and buying methods.

The division is organized along product lines and buying assignments follow the same arrangement. P.A. Frank Wodrich's department has five production buying groups: anti-submarine warfare, heavy radar, surveillance, missiles, and optics. Each group has a senior buyer and varying numbers of buyers (there are three men in ASW, for example.)

Buyers in each group are assigned to specific projects. A buy-

er in the heavy surface radar group, for example, might be assigned to the FAA project, TI's production of airport radar systems for the Federal Aviation Agency. He serves as the purchasing member of the project team, which ordinarily consists of himself, and several manufacturing engineers or planners and design engineers depending on the size of the project. The FAA radar project had about 11 manufacturing engineers, 60 design engineers, and 1 buyer. Leader of the team is the project head, who has charge of the financial status of the contract and has profit responsibility for it.

Purchasing's work starts long before TI gets the contract, however. It starts supplying price information as soon as a bid is contemplated. As the cost estimating section produces bills of material on bid work, purchasing establishes prices for each individual item in the job, whether it's new or repetitive. These prices later become targets for purchasing if TI wins the contract. Sometimes, however, the design of a part may be fluid—or not even created—in which case no purchase target can be set up.

On some of the smaller jobs, buyers are assigned as many as 10 projects at a time. Conversely,

## How Texas Instruments Buys

one job may take the full time of one buyer for a year or more. It is the senior buyer's responsibility to distribute the load in his section. Wodrich thinks the project approach has made for a fairer and more efficient distribution of work. "Under the commodity system," he says, "one buyer might be very busy and another coasting. There was nothing deliberate about it—that's just the way it worked out. Under the project system the work is split up evenly. We get a better buying job and the buyer gets more diversified experience."

The project team goes to work as soon as a contract is signed. Both the senior buyer, who has been sitting in on pricing meetings, and the project buyer are well-informed on all details of the bid. From long experience and close association with manufacturing and engineering they are pretty familiar with those departments' design and production problems with difficult switches, relays, tubes, and the like. Even

before RP's (request for purchase) start coming in, the buyers armed with copies of all drawings, has started to make inquiries.

### Use Purchase Analysis Card

It's here that purchasing has to be able to make the "fast turnaround" Wodrich says is so essential to the company's success. "We try to get as far out in front as we can," he says. "We try to establish lead times on as many items as soon as we can. Given any reasonable lead time, we try to be ready to buy before we get approval from manufacturing. We give engineering and manufacturing our long lead items right off the bat. Then they know where we stand and can time their RP's accordingly. Instead of having production beat us over the head trying to get certain items, we want to be in the position of beating them over the head to get authority to go ahead and make a buy."

On a very big job, a buyer will sit down with manufacturing and

engineering representatives and review his position on price and delivery. Normal scheduling is to allow 3 months' lead time ahead of TI's shipping date.

A special purchase analysis card, developed by the buyers, helps them to analyze quotations and compare purchase prices with target prices. Before a purchase is made both the buyer and senior buyer can get from the card complete information of the cost of the part. If the price is high or a misbid is made purchasing can go to another source or suggest an alternate material. As purchases are made, each buyer maintains a daily work sheet showing whether his purchases are on the plus or minus side of the target. Reports compiled from these sheets show results by project and by buyer.

None of Wodrich's buyers will die of boredom. The project buying system has its own built-in irritants and stimulants to keep them hopping. Some of the Apparatus Division's products have up

PURCHASED ITEM HISTORY CARD										PART NO. 51439		DESCRIPTION GEAR		CONVERSION 32			
PROJECT'S USED IN										DATE		QTY		DATE		QTY	
PROJECT										DATE		QTY		DATE		QTY	
APR-45																	
QUOTATIONS LIST OF PURCHASING										EACH		END REF		ORDER LOG			
V	VERSION	QUOTATION	DATE	1-50	51-100	101-150	QUOTED	SET UP	TOOLING	V	P. O. NO.	PRICE	QTY	DATE			
1	Myron	39	4-50	3.00	2.00	1.00				2	314-44-05	3.00	25	5/59			
2	Frankman	67	3-45	3.00	2.00	1.00											
3	Frank	39	2-40	3.00	2.00	1.00											
4	Dynamic	39	2-40	3.00	2.00	1.00											

Purchased Item History Card, developed by the buyers, helps them analyze quotations and compare prices paid with target prices.

to 3900 purchased components in them. Just as a buyer is getting himself organized to handle that kind of an avalanche, he may find himself assigned to another entirely different type of system—all within a few days. And in almost any project he'll be faced with developing as many as 30 new vendors, some of them in fields he's unfamiliar with.

"This is a job that calls for all around versatility," says Senior Buyer Ralph Lucas. "The buyer has to be familiar with practically everything. He's a specialist—but only as long as it's necessary. He can learn all about a project—but then he has to be ready to go on to become a specialist in something entirely new."

#### Get Buyers in the Labs

Wodrich believes that his buyers "should spend as much time as possible in the engineering labs. They should offer to help get any vendor information that will help. They should be pushing for release of long-lead purchased items; should be constantly aware of value analysis in design, and be ready to furnish competitive quotations on all possible items.

"It a prime necessity for the buyer to understand specifications to insure their completeness. The buyer has the responsibility for reviewing specs and requesting changes from engineers when he thinks they're feasible."

#### Have to Meet Target Price

If the demands on the TI buyer's skill are great on the inside, they're just as great on the outside. He's got to meet the target price on purchased parts. TI's bids on government work are too competitive to allow very much leeway in manufacturing cost. But the early delivery demanded in many contracts often forces the buyer to get the best price he can in a very short time. So he has to know what vendors are available and what they're able to do in a pinch. (Turn Page)

MARCH 27, 1961



In a typical meeting of a project team, a buyer and engineers discuss possible simplification in processing of a component. With back to camera: Erwin Reschke, manufacturing engineer; left to right: Ralph Lucas, senior buyer; Dick Stripling, project engineer; Glenn Penisten, acoustics branch manager.



In buying for products as numerous and complex as TI's, purchasing must constantly develop new vendors with new ideas. Here, P.A. Frank Wodrich, center, and Jack Decatur, confer with sales rep Vic Sykes.

Frank Wodrich, center, conducts one of the purchasing department's regular monthly meetings. Most of the buyers are college graduates, average about 10 years experience with TI (in purchasing or manufacturing) and have an average age of 38. With back to camera: George Filak, buyer; left to right: Bruce Madden, buyer; Sigurd Bjorkman, buyer; Leslie Noell, buyer; Ralph Lucas, buyer; Charles Falkenberg; expeditor Jack Decatur, buyer; Frank Wodrich, purchasing agent; Wayne Best, buyer; Lee Darley, buyer; Harvey Puckett, buyer, and another buyer no longer with TI.





## How Texas Instruments Buys

Buyers also run up against reliability and quality problems on rush jobs. Working on a job that has to be delivered in 2 years, they can go out and look for other vendors to replace those who fall down on quality. But when they have only 6 weeks to finish a project and the quantities they're buying are low, it's difficult to change sources. (Delivery problems are discussed in another section of this article.)

TI's buyers aren't in the least

disheartened by these problems. They're young, experienced, ambitious, and ready to meet the challenge the job presents. They take seriously what they were told at a recent meeting: "You're measured by your teammates by how well you cooperate; whether you contribute ideas; the appropriateness of your opinions; your knowledge of purchasing; and your familiarity with vendors."

Wodrich has instituted a series of training meetings to better

equip buyers to meet the demands put upon them. Three-hour night sessions are held every month. In a typical meeting, one of the senior buyers discussed "The Buyer's Role With the Product Line Team." He was followed by Frank Wodrich who gave a five-part talk on "Selling the Vendor on—Specs, Speed, Quality, Reliability, and Feedback (of information.)" After each section, buyers joined in a 15-minute discussion period.

## Purchasing Needs Material On Time, in Good Condition

TEXAS INSTRUMENTS' Apparatus Division can't afford to have any soft spots in its materials cycle. If a late delivery or a damaged shipment holds up a government project it could cost the division plenty of future business.

The material has to be moved in on time in good condition at lowest cost. And everyone responsible for getting or using material has to know at all times where it is and when he'll get it.

The job of staying on top of materials goes to the Material Control section of Frank Wodrich's purchasing department. The 42-man unit takes in the key areas of traffic and transportation, material coordination (including follow-up and expediting), receiving, warehousing, and materials handling. In a logical extension of its basic responsibility, the group also handles collating and packing, shipping, and surplus and scrap sales.

"The biggest asset to a set-up like this is the good communication you get between people," states "Doc" Bryson, former material control supervisor. (Bry-

son, who now supervises airport radar installation, has been succeeded by Roy Neeley, formerly a manufacturing engineer for TI.)

"You can create a paper mill trying to keep needed information flowing between departments," he says. "Buyers have to tell traffic their problems. Then traffic has to

tell receiving. Then the information has to flow back the other way. With all these functions tied together in material control, which is also part of purchasing, the information gets around faster and we get action faster. When you're in separate departments problems seem to bounce around for days



"Hot Board" in receiving lists critical shipments along with the name of the person who needs them. Items listed on the board are rushed to quality control and on to production as soon as they are received.

TEXAS INSTRUMENTS  
INCORPORATED

APPARATUS DIVISION

5000 LEMMON AVENUE DALLAS 8, TEXAS  
PLATTWOOD 7-8411 P. O. BOX 7048, CABLE TEXING

SUBJECT:

THE ACCOMPANYING PURCHASE ORDER SPECIFIES MATERIAL REQUIRED FOR AN IMPORTANT DEFENSE PROGRAM. YOUR PRODUCT HAS SELECTED WITH CONFIDENCE THAT HIGHLY RELIABLE PARTS WILL BE FURNISHED ON TIME. IT IS ESSENTIAL THAT NEITHER FAULTY MATERIAL NOR DELAYS AFFECT OUR DELIVERY COMMITMENTS AND CONCEIVABLY JEOPARDIZE OUR NATIONAL SECURITY.

PLEASE CAREFULLY REVIEW OUR SPECIFICATIONS AND ADVISE IMMEDIATELY OF ANY DISCREPANCIES WHICH NEED FURTHER DISCUSSION.

ON THIS IMPORTANT ORDER, WE REQUIRE A TELEGRAM ON THE DATE OF EACH SCHEDULED SHIPMENT; FURTHERMORE, IF YOU DO NOT SHIP ON THAT DATE, PLEASE INFORM US BY TELEGRAM OF THE REASON FOR THE DELAY AND THE REVISED SHIPPING DATE.

ALL INCOMING SHIPMENTS WILL RECEIVE STRINGENT INSPECTION. WE RECOMMEND THAT YOU ALERT YOUR OWN QUALITY ASSURANCE SO AS TO AVOID EXPENSIVE RETURNS WITH RESULTANT DELAYS.

THE REQUIREMENTS ATTACHED ARE FULLY AS IMPORTANT AS THOSE OF THE PURCHASE ORDER AND ARE TI'S "GOLDEN RULES" FOR A RELIABLE VENDOR.

YOURS VERY TRULY,

TEXAS INSTRUMENTS INCORPORATED

FRANK V. VOORICH  
PURCHASING AGENT

FVH:phc

TEXAS INSTRUMENTS  
INCORPORATED



5000 LEMMON AVENUE DALLAS 8, TEXAS  
PLATTWOOD 7-8411 P. O. BOX 7048, CABLE TEXING

APPARATUS DIVISION

TEXAS INSTRUMENTS REQUIRES THAT THE FOLLOWING ADDITIONAL CONDITIONS BE ACCEPTED IN ORDER TO SATISFACTORILY CONSUMMATE THIS PURCHASE ORDER.

- (1) BE SURE THAT ALL DRAWINGS AND SPECIFICATIONS ARE COMPLETELY CLEAR BEFORE THE START OF PRODUCTION.
- (2) IMMEDIATELY NOTIFY THE BUYER OF ANY UNEXPECTED DIFFICULTY WHICH COULD DELAY SHIPPING DATE REQUIRED ON PURCHASE ORDER.
- (3) WHEN SHIPPING DATE ARRIVES, INFORM TEXAS INSTRUMENTS BY TELEGRAM THAT SHIPMENT HAS BEEN MADE AND GIVE ROUTING AND WAYBILL NUMBER. IF SHIPMENT CANNOT BE MADE ON DATE SPECIFIED, INFORM TEXAS INSTRUMENTS BY TELEGRAM OF THE REASON FOR DELAY AND THE NEW SHIPPING DATE.
- (4) ALLOW CREDIT FOR DIFFERENCE BETWEEN PURCHASE ORDER ROUTING AND AIR SHIPMENT WHEN THE LATTER IS CAUSED BY YOUR DELAY.
- (5) IMMEDIATELY NOTIFY THE BUYER IN ANY CASES WHERE HE MIGHT BE ABLE TO ASSIST IN EXPEDITING YOUR OUTSIDE VENDORS.
- (6) IN THE CASE OF ANY DIFFICULTIES WITH YOUR PRODUCTION OR YOUR SUBCONTRACTORS, KEEP US POSTED BY WIRE OR PHONE, ADVISING THE NATURE OF DIFFICULTY AND COURSE OF ACTION BEING TAKEN.

WHEN PURCHASE ORDER COVERS AN ITEM REQUIRING MILITARY QUALIFIED PRODUCTS APPROVAL AND YOU LOSE APPROVAL FOR ANY REASON, NOTIFY US IMMEDIATELY.

INSPECT PARTS THOROUGHLY BEFORE SHIPMENT IS MADE TO ELIMINATE COST OF RETURN OF MATERIAL FOR REPAIR OR REPLACEMENT, AS WELL AS ATTENDANT DELAY.

IN ACCORDANCE WITH INSTRUCTIONS ON PURCHASE ORDER, YOU WILL BE CHARGED FOR COSTS INCURRED DUE TO INCORRECT ROUTING.

Importance of quality and speed to Texas Instruments is stressed in letter which is sent by purchasing to each new supplier. The same letter is sent periodically to regular suppliers.

and weeks without getting settled. This way, we can sit down together to discuss and solve them pretty quickly."

TI goes after value in transportation the way it goes after value in materials. The traffic coordinator has had 20 years of experience with Railway Express, 14 of them in the Air Express division. He campaigns constantly inside and outside the company to cut down excess shipping cost. His propaganda for better and cheaper transportation never ends. Even in writing up a rather formal outline of the purpose and responsibility of the traffic section he added this note:

"In all cases the purchase order will carry a complete routing, including specific first and second line carriers when more than one truck is involved. WHY USE 2 WHEN 1 GOES THROUGH?"

Every carrier that hopes to do business with TI goes through a rigid analysis. The traffic section wants to know what kind of

equipment and terminal facilities the carrier has; how good its communication service is—Teletype, straight line phones, etc.; the abilities of tracing clerks, rate clerks, and other personnel; whether it has good interline carriers.

Although TI tries for top quality and lowest cost in transportation it doesn't hound its carriers. It has scrupulously avoided trying to push damage claims on to carriers without careful investigation as to where responsibility really lies.

#### Who's to Blame for Damage?

Damage claims, or more correctly the avoidance of damage claims, is in fact one of the more important jobs of the traffic group. For several years it has carried on a vigorous campaign of packaging education among its suppliers. A four-page pamphlet entitled "It's A Lo-o-ng Way to Texas; A Reminder by Texas Instruments . . . Good Packaging

Doesn't Cost, It Pays," was distributed a few years ago and gained national attention. It helped reduce damaged shipments substantially.

One of traffic's most effective weapons in cutting down losses through poor packaging is a Polaroid camera. All damaged shipments are photographed immediately. When a vendor tries to blame the carrier, TI comes right back at him with the evidence. Traffic has a series of right-to-the-point form letters (see illustrations) it uses in settling claims. If they don't work, more personal correspondence is used. ("You shipped a \$175 transformer in a package I wouldn't use in an in-plant movement," the traffic coordinator told a vendor recently.

If the correspondence fails, TI traffic people will go directly to the sales manager of the offending vendor, armed with the evidence—broken packages, photographs, and all. But this is a last

## How Texas Instruments Buys

resort and isn't needed very often. As a rule, response to the form letters is good and suppliers appreciate it. Many have come into TI's plant and worked with the material control to iron out difficulties.

### It's a Pressure Job

Buyers are not the only TI purchasing people who make plant visits. Members of the traffic section try to get to the plants of at least three major vendors a year to inspect their packaging systems and facilities. The same type of program is carried on with major carriers.

As material moves into receiving, it is material control's job to notify everybody concerned that it's in the plant. Receiving main-

tains a "hot board" (see illustration p. 74) right next to the receiving dock. If a shipment is listed on the board it is taken right into quality control, then moved through to production. "We don't want to let that stuff sit anywhere for 30 minutes," says one clerk. "We push quality control to inspect it and then get it where it's supposed to go."

Shipments that are delayed before they even get to a carrier are also the responsibility of the materials control section. A materials coordinator handles expediting and follow-up. It's up to him to feed information on short items to production, thereby relieving the pressure on the project buyer.

The materials coordinator keeps a complete follow-up card file on

all open purchase orders. The card comes off the Ditto copy of the purchase order and contains the following: vendor's acknowledgment; promised shipping date; all change notices; material receipts; all information obtained from the vendor received by phone, telegrams, vendor representative, etc.; all post cards, wires, calls, etc. made by the coordinator or buyer.

### How TI Handles Follow-up

The coordinator sends a post card to the vendor one week before promised shipping date to confirm that parts are being shipped as scheduled. A second card goes out 24 hours before the vendor is supposed to ship. If he doesn't answer, or his answer isn't satisfactory, the coordinator turns

Informal pleas for help on cutting costs, preventing damage are included with shipping instructions in this letter to supplier traffic departments.

<b>TEXAS INSTRUMENTS</b> INCORPORATED		5000 LEMMON AVENUE, DALLAS 5, TEXAS TELEPHONE 2-1781, P. O. BOX 7048, CABLE TEXINS
Attention:	Traffic Manager Shipping Department Supervisor	
Subject:	Standard Shipping and Routing Instructions	
Won't you please help us control our shipments from your plant to ours here in Texas? By using our routing instructions on Texas Instruments purchase orders, this little chore should be easy. Listed below you will find our established routing instructions for your convenience.		
<b>Less-Carload Shipments:</b>		
(A)	Consolidate on one bill of lading all shipments for any one day.  SHIP VIA: <u>UNINSURED PARCEL POST</u> NOTE: DELICATE INSTRUMENTS OR GLASS - SHIP RAILWAY EXPRESS (DECLARE MINIMUM VALUE)	
(B)	If shipment does not exceed 20 pounds, gross weight, and 72 inches in length and girth combined, or \$5,000 value:  SHIP VIA: <u>RAILWAY EXPRESS</u> (DECLARE MINIMUM VALUE)	
(C)	Aggregate weight 21 pounds up to 50 pounds:  SHIP VIA: <u>COMMON CARRIER, MOTOR FREIGHT OR FREIGHT FORWARDER</u> NOTE: <u>PLEASE USE SPECIFIC ROUTING ON PURCHASE ORDER</u>	
(D)	Aggregate weight over 50 pounds:  SHIP VIA: <u>COMMON CARRIER, MOTOR FREIGHT OR FREIGHT FORWARDER</u> NOTE: <u>PLEASE USE SPECIFIC ROUTING ON PURCHASE ORDER</u>	
<b>Air Shipments:</b>		
(E)	Air Shipments, when requested by Texas Instruments Purchasing Department by telephone, will be your authority to disregard routing instructions on the purchase order and ship by air as follows:	

Texas Instruments Incorporated Standard Shipping and Routing Instructions	
- 2 -	
(1)	1 to 4 pounds - Air Parcel Post uninsured.
(2)	5 to 20 pounds - Air Express - declare minimum value.
(3)	21 pounds and over - Air Freight - declare minimum value.
<b>NOTE:</b> DO NOT USE PREMIUM AIR FORWARDER SERVICE WITHOUT THE SPECIFIC AUTHORIZATION OF TEXAS INSTRUMENTS PURCHASING DEPARTMENT.	
Commodity Description: The rates applied to shipments moving via Common Carrier are dependent in part on the classification of the items on bills of lading. We urge you to exercise care in selecting classification which will result in the lowest legal rate.	
<b>VALUE DECLARATIONS:</b> Do not declare more than free minimum valuation on shipments routed via Railway Express, Air Express or Air Freight and do not insure Parcel Post or Air Parcel Post. Any excess transportation costs incurred by non-compliance with the above will be charged back to the shipper.	
PLEASE USE SPECIFIC ROUTING ON OUR PURCHASE ORDERS.	
THANKS "Good Packaging Doesn't Cost ----- It Pays!"	
Yours very truly, TEXAS INSTRUMENTS INCORPORATED C. D. Bryson Material Control Supervisor Apparatus Division	



the follow-up file over to the buyer. From there in it's up to him to get results.

Wodrich insists that there be no let-up on trying to get better results and lower costs on expediting. His plans now call for sending out a special letter with each important purchase explaining TI's delivery requirements, spe-

cifications, need for quality with stress on the high cost of rejects. It will explain that TI will require a progress report on an order when necessary. It will point out that TI wants accurate and consistent advice on shipments as a part of doing business. "It's the vendor's responsibility to expedite, not ours," he says. "We want

them to do more while we do less."

Wodrich is considering two measures to get a little more compliance with TI's requests for better expediting: collect calls or telegrams to foot-dragging vendors, and a demand that vendors pay premium freight charges on delinquent shipments.

## Work Simplification Cuts Cost Throughout Department

**I**N P.A. Frank Wodrich's report to management on plans for the coming year is the following:

"Continue girls' team effort on stenos' desks, receptionist desk, handling of p.o.'s after typing, filing, etc. Assign a definite weekly time to do this."

This may seem like pretty small potatoes to throw in with some of the big projects being planned in Texas Instruments purchasing. Yet it's just as impressive. It shows that determination to cut costs and increase efficiency doesn't end at the buyer level. Work simplification at TI is the responsibility of everyone, from sweepers to president.

The girls' team Wodrich speaks of attended formal work simplification classes conducted by the company. They were asked to suggest improvements in their own operations, then were given time to discuss and analyze those that looked best to their supervisors.

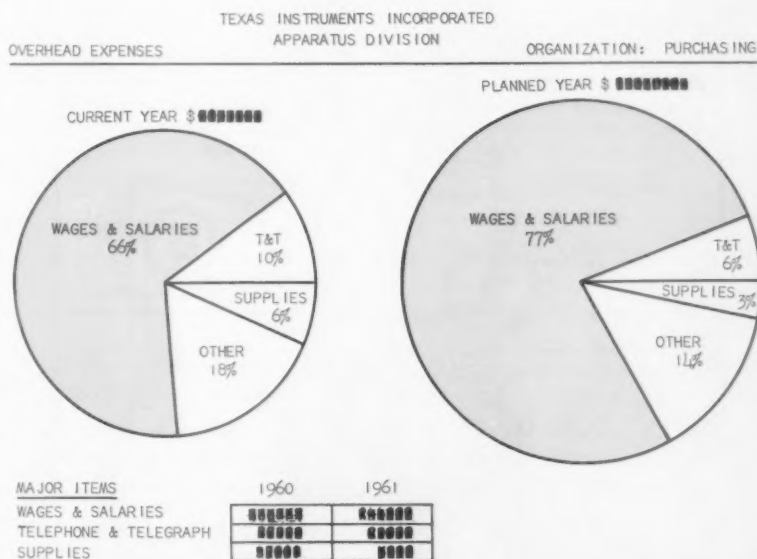
Everyone else in purchasing—buyers, material controllers, packers, etc.—uses the same approach. They may tackle projects singly, or as a committee. A study of filing methods, for example, was undertaken by a committee of two buyers and a secretary. Three buyers and a materials coordinator worked on a plan to improve delivery of material from receiv-

ing to the engineering labs.

Time is allotted to committees for their studies—usually two hours a week, and sometimes twice a week on projects that show great promise. Among the projects worked on recently (in addition to those of the girls' team) were: reduction of MRO paperwork by 50% by use of EOQ; cutting down on followup, etc.; use of annual contracts

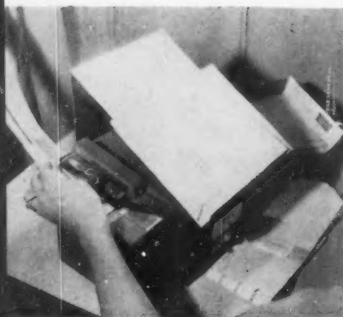
wherever possible; scheduled weekly buying of certain commodities; development of more efficient forms.

Purchasing's work simplification often involves other departments. A typical project on scheduling stock requisitions to the warehouse involved cooperation with a number of shop people. The problem was the apparent lack of coordination or release of



Pie-charts from Wodrich's annual report reflect effort to cut down on administrative expenses and upgrade positions of buyers and other personnel.

## How Texas Instruments Buys



TI uses data processing to originate and report purchase orders, and analyze purchasing data. Photo at left shows edge punched vendor card being fed into system. Center and right are views of the IBM 632 electronic

typing computer. Reports produced here include commitments, buyer activity, project bid comparison, and many others.

TI FORM 10-60 WORK SIMPLIFICATION METHODS IMPROVEMENT REPORT			
Texas Instruments Incorporated		Apparatus Division	
SUBJECT OF REPORT:		PROJECT NUMBER:	
Submitted by: <b>ROY MEELY</b>	BASIS OF SAVINGS: ANNUAL/CONTRACT <b>ANNUAL</b>	DO NOT WRITE IN THIS SPACE DATE OF REPORT: <b>9-26-60</b> DATE INSTALLED: <b>4-11-60</b>	
Part Number:	Description of Improvement:		
Contract No.:	<b>CHANGE METHOD OF HANDLING PARTS IN RECEIVING AND QUALITY CONTROL TO ELIMINATE LOST TIME IN SEVERAL AREAS</b>		
W.O. Number:			
Area/Location of Improvement:	<b>(424) LEVEE</b>		
Summary of Savings			
MATERIAL OR OTHER COSTS:		Present Method	Proposed Method
1. Material, Supplies, etc. per DAY OR UNIT:		\$	\$
2. Total Production of Days, or Units.			
3. Total Material Costs (Line 1 x Line 2)		\$	\$
LABOR:			
4. Man Hours Per DAY OR UNIT:		MH	17.5 MH
5. Total Production of 245 Days, or Units.			
6. Total Man Hours (Line 4 x Line 5)		MH	4,287.5 MH
7. Labor Cost per Man Hour \$ RATE PER HOUR:			
8. TOTAL LABOR COST (LINE 6 x LINE 7)		\$	\$ 11,013.00
OVERHEAD:			
9. % of Total Labor Cost (This % x Line 8)		\$	\$ 11,319.00
10. TOTAL MLO COSTS (LINE 3 + LINE 8 + LINE 9)		\$	\$ 22,332.00
11. TOTAL MLO GROSS SAVINGS			\$ 22,332.00
Cost of Installation: (Jigs, Fixtures, Tools, etc.)			
Material \$ 82.00			
Labor \$			
% OH \$			
12. Total Cost of Installation		\$ 82.00	
13. Net Savings (Line 11 - Line 12)		\$ 22,250.00	
Immediate Supervisor			
Is this method workable and sound? <b>YES</b>			
What improvements, if any, can you add?			
IMPROVEMENT HAS BEEN <input type="checkbox"/> WILL BE <input type="checkbox"/> INSTALLED			
DATE		Signature	

All workable suggestions developed in the work simplification program are reported on this form. Everyone in the department is expected to participate in the program, either individually or as a member of a committee.

stock requisitions by planning, the shop superintendent, and the shop foreman. Purchasing was having trouble handling peak requisition loads, even with overtime.

A committee representing all sections concerned attacked the problem. In a series of meetings they broke it down into several sub-problems and decided to concentrate on one of these at a time. A statistical analysis of the number of requisitions handled at various times showed how unbalanced loads were caused and handling costs were raised.

Several possible solutions were offered. The consensus was that the warehouse operation should be scheduled and considered the same as an assembly production line. Working from that general agreement the committee came up with a tentative procedure. Basically, it called for the planner to give the warehouse a schedule of assembly shop releases, along with an estimate of the number of stock requisitions involved in each. The superintendent, foreman, and material control personnel would coordinate their efforts to see that extreme peaks and valleys in requisitioning would be eliminated.

Reports on committees' work—in much greater detail than above—are submitted to Wodrich and ultimately to management in the form of a Methods Improvement Report (See left). ► END

**R**EWARDING the enterprising supplier who comes up with a really new, money-making idea is one of the real pleasures in purchasing. But what happens when another supplier moves in and offers to copy the idea at a lower price? The conscientious buyer may find himself uncomfortable, no matter which decision he makes.

If the idea is patentable, there's no problem. The law specifically protects the innovator. But it's different with the almost-patentable innovation. Here the innovator is at the buyer's mercy. He should reward him, but how?

### How Buyer Makes His Mind Up

The decision is the buyer's alone and must be based on assumptions rather than clear-cut facts. But he can use a mathematical formula to organize his thinking. The formula helps him compare the value of the innovation with the further savings to be gained from the copier's lower price.

The formula says: after an innovator's price is cut, the *logical time* a buyer should buy from an innovator is equal to the product of (1) the *estimated time it would have taken to find the innovation without the innovator* and (2) the *ratio of the innovation cost saving to the additional price saving*.

In symbols,

$$x = t \frac{k}{p}$$

Let  $t$  = estimated time it would take to arrive at the innovation without the innovator.

Let  $k$  = innovation cost gain.

Let  $p$  = further gain from price cut on innovation.

To find  $x$ , or logical time we can buy from innovator, we seek that time period when the saving from the additional price cut is equal to the innovated saving over time  $t$ .

$$px = kt$$

dividing by  $p$ :

$$x = t \frac{k}{p}$$

Example: A firm that packs 500 widgets a month in wooden boxes costing \$4.00 each has tried for years to find a cheaper package. Many companies have tried and given up, when along comes Company A with a corrugated package that costs \$3.00 each and solves

## Reward Suppliers For New Ideas

*Some suppliers will offer to copy another vendor's money-making idea and cut the price. That leaves the conscientious P.A. in the middle. Here's a formula that will help him make a fair and economically sound decision.*

**By Latham L. Thigpen, Jr.**

West Virginia Pulp and Paper Co.  
Lynchburg, Va.

the problem. The saving over 500 items of one dollar each is \$500 a month. The buyer is delighted.

By the time the first boxes are in use, however, along comes Company B. Company B copies the box exactly and announces it is anxious to manufacture the box for \$2.80 apiece. How long should the buyer continue to pay Company A's price? It is strictly up to him, for the new item just misses being patentable.

One solution might be to reward the innovator by continuing to pay his higher charges year after year. After all, didn't he cut the Gordian knot, create some-

thing where nothing was before? If he hadn't innovated, would the copier have a price to cut? But this is hard to defend when you have a chance to further lower costs.

Another clear-cut solution would be to ditch the innovator then and there and buy the less expensive substitute. But this is hard on the conscience. Americans recognize that innovation should be rewarded.

We can attack this problem as follows:

We know on a monthly basis that  $k$ , the cost gain from our in-

(Please turn to page 142)



"Before you give me such a terrific deal, what is it?"



# Forms Forum

This article is one of a series illustrating and explaining the use of various purchasing department forms. All forms that will be described in this series have been selected from representative purchasing organizations around the country.

A "SINGLE-writing method" based on a hectograph duplicator has given The Sibley Company in Haddam, Conn., a flexible, efficient procedure for handling purchase orders and receiving reports. Purchasing Agent Charles D. Gates developed a series of compatible forms to tie in with the system.

Master purchase orders are typed directly from requisitions after they are checked and approved by the buyer. The order form has two sections: the top for purchase information and the bottom for receiving data.

## Getting Quote Requests

The master may first be used to duplicate requests for quotation forms. In this case the vendor's name is not typed in. Vendors' names are typed on the individual quotation sets before they are mailed.

When a vendor is chosen, his name is typed on the master and

THE SIBLEY COMPANY										
PRINTED CIRCUITS—TECHNICAL PLATING										
HADDAM, CONN.										
Diamond 5-4333										
TO		PAGE		OF		PAGES		PURCHASE ORDER NO.		
								DATE		
								THIS NUMBER MUST APPEAR ON ALL INVOICES PACKAGES PACKING SLIPS AND CORRESPONDENCE		
								EXTRA COPIES <input type="checkbox"/>		
								TO		
REQ. NO.	REQ. BY	CODE NO.	SHIP VIA	TERMS	T.O.B.					
QUANTITY		DESCRIPTION						DELIVERY REQUIRED		
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Purchase order sets are run off on a duplicating machine. The set includes an expediting copy (reverse side shown here) and an 8½ x 11 card for purchasing department records. The master is then sent to the receiving department.

When the material arrives receiving checks it against the packing slip. Then the clerk pulls out the proper master and makes a longhand entry of the receipt with hectograph carbon. He doesn't

Purchasing Agent Gates points out that the system has numerous advantages—among them:

- ▶ END

# New Look in Purchasing Education

*Fifteen buying executives are going back to school—in a big way. They're taking a four-year course in materials and general management at the University of Wisconsin. The program is geared to their personal and professional needs.*

**F**IFTEEN purchasing executives are helping to carry out a unique experiment in management education. They're participating in a personalized, integrated program in materials management at the Management Institute of the University of Wisconsin.

The program was planned by William P. Stilwell, assistant director of MI. The institute attracts more than 6,000 executives a year.

What makes the program so unusual?

- The sessions are integrated into a comprehensive four-year program.

- The sessions are geared in detail to the special interests and abilities of the participants.

- The men themselves have defined the directions the program is to take.

This elaborate program didn't just happen, of course. It was planned well in advance by Stilwell, and an Advisory Committee of purchasing agents.

The materials management program at MI got its major push a year ago. Stilwell and others on the Wisconsin faculty—desiring to use materials management to acquaint purchasing men with the

administrative phase of management—set up a sequence of conferences on the subject.

Fifty men gathered on the Wisconsin campus for the seminars. They were exposed to an expanded concept of materials management. For example, one P.A. said, "If we are going to fill our responsibility in management, we need to know more than the technical parts of the job; we must broaden our whole scope of thinking and knowledge."

## **P.A.'s Choose Courses**

Following the initial conferences, Stilwell began a study in two areas:

- (1) What steps could be taken to help purchasing move toward professional management status?

- (2) Could a group of purchasing executives look at themselves in terms of their limitations, challenges, and goals?

To probe these possibilities, the 50 MI participants chose from their membership a materials management advisory committee. The committee set its sights on developing a program devoted to exploratory education in materials management—one that would plot new guide lines and be prac-

tical at the same time. Emphasis would be on the whole management process: administration, people, technical aspects, and general management.

## **Announces 4 Year Program**

The committee didn't limit itself to a revised program for the coming year. It came up with a four-year program that would meet the needs of those who wanted to advance further into materials management. Its plans provided for periodic sessions over the next three years.

A series of meetings and mailings narrowed down the interested number to 15. In turn, these 15 further refined the plans to meet their personal needs and interests, which included:

- (1) Down-to-earth lectures and participation sessions.

- (2) Informal get-togethers in the evenings to crystallize and apply ideas presented during the day.

- (3) Three two-day sessions for the 1960-61 academic year.

In November 1960, the program became a reality. Pencils in hand, the 15 men began working on corporate financing, costs, and budgets.





Purchasing "students" help define the direction to be taken by MI's materials management program. Allan E. Felton, purchasing agent, Red Star Yeast and Products, fills in an evaluation sheet as part of a session critique.



Participants asked specifically for time for bull sessions. Following a regular session, two instructors go over a disputed area with two purchasing executives: (l. to r.) A. K. Kolar, purchasing agent, Link Belt Co.; William Stilwell, coordinator of the program for MI; J. Russell Downey, partner in Peat, Marwick, Mitchell & Co., a discussion leader; and William Brossmann, purchasing agent, Koehring Co.



A session in statistics is led by Dean E. A. Gaumnitz of UW's School of Commerce. Enrollees may ask for more information or for general discussion at any time during lectures.

The second meeting was in January 1961, emphasizing statistics, marketing, and production planning. The third, set for April 20-21, will cover production control, inventory control, and traffic.

What's up for the next two years?

The 1960-61 sessions are emphasizing "Tools and Techniques."

The format has provided basic instruction and ample opportunity to work out problems.

During the next academic year, 1961-62, the program will be devoted to "The People Side" of materials management. It will emphasize such topics as working with other executives, labor relations, motivation, salesmanship,

sociology, training, development, and counseling.

The fourth year will highlight "General Management," focusing on decision making, problem solving, administration, and case studies. This program will pull together the instruction of the three previous years.

(Please turn to page 144)

# IDP Cuts Days From Purchasing Cycle

*Buying for a plant that makes large, complex and individually engineered units involves enormous amounts of time and detail. The Babcock & Wilcox boiler division uses integrated data processing to cut down on both, while improving purchasing efficiency.*

**W**HEN YOUR purchase orders run as long as 15 pages each, there would seem to be little hope for simplifying paperwork. But at the Babcock & Wilcox boiler division in Barberton, Ohio, management proved it could be done.

Using integrated data processing, the company has cut days off the time it formerly took to process a purchase from requisition to receipt. In addition, purchasing is now more efficient, statistical reports more timely, and the flow of information more rapid. One writing of basic data starts the whole buying cycle.

Purchasing at B&W is complex

because of the nature of the manufactured product. Boilers are not mass-produced items. Each one is individually engineered and must meet strict customer specifications, the ASME boiler code, etc. The price may range from \$20,000 to \$15,000,000. While final fabrication and assembly is handled by the company, materials and components must come from a number of sources. These break down into two major types: "engineered products," such as fans, motors, valves, etc., which are requisitioned by the contract engineering department; and "raw materials," consisting of steel

tubes, plates, shapes, sheets, strip, bars, forgings castings, etc., requisitioned by general production control.

Requisitions also originate in three other areas. The shops requisition expense items such as maintenance and operating supplies. Material control uses traveling requisitions for stock materials. Plant engineering issues requisitions for capital equipment and construction projects. Management's objective was to obtain the simplest, most efficient method for coordinating all five requisition points with purchasing, receiving, accounts payable and tab-



Requisition from general production control arrives in purchasing department via teletype transmission in both hard copy and tape form.



After buyer adds vendor, price, terms, etc. to requisition, teletype operator simultaneously types purchase order and punches new information onto a tape.

ulating.

The first step was to set up a task force. This group studied existing procedures and methods. Representatives of the Standard Register Co. were called in to make flow charts and work with the task force to develop the system and design forms. During the charting stage the group found many ways to reduce costs, particularly with regard to duplication of writing and the preparation and handling of unnecessary copies.

For instance the study found that it often took eight days or more for information to travel from the requisition source to

REQ-1000-REV. 2 REQUISITION

VERNON *John C. Jones*  
 BUFP TO *Motor*  
 VIA *1/4 - 10 21 30*  
 TERMS  
 PAYABLE  
 P.O. COPIES TO *5*

THE B. & W. CO.		BOILER DIVISION		BARBERTON, OHIO	
REQUISITIONED BY & DATE	END/FS@11660	DELIVER TO	192	REQUIRED AT DESTINATION	111860 RUSH
BY	123 FIRST ST CLEVELAND, OHIO				
ITEM	23 LF BAR HEX 9/16"	DESCRIPTION		NET PRICE	3000 CWT
QUANTITY	1	UNIT			
MATERIAL- AISI TYPE C-1018					
BAR TO HAVE HEAT NUMBER STAMPED ON ONE END.					
GOVERNMENT ACCEPTANCE WILL BE BASED UPON VENDOR FURNISHING A NOTARIZED CERTIFICATE OF COMPLIANCE WHICH MUST INDICATE THAT MATERIAL IS IN ACCORDANCE WITH ORDER AND MUST INCLUDE HEAT NUMBERS OR SERIAL NUMBERS OF ITEMS AND THE DATES AND NUMBERS OF ALL PURCHASE ORDER CHANGES, ESPECIALLY THOSE INVOLVING CHANGES IN QUANTITY AND SIZE OF MATERIAL.					
ONE COPY OF THE CERTIFICATE OF COMPLIANCE MUST BE INCLUDED WITH THE SHIPMENT.					
ON THE DAY OF SHIPMENT, THREE /3/ COPIES OF THE CERTIFICATE OF COMPLIANCE IS TO BE FORWARDED TO THE BARCOCK & WILCOX COMPANY, PURCHASING DEPT., P.O. BOX 351, STIRLING AVENUE, BARBERTON, OHIO.					
ON THE DAY OF SHIPMENT, ONE /1/ COPY OF THE CERTIFICATE OF COMPLIANCE IS TO BE FORWARDED DIRECTLY TO INSPECTOR OF NAVY MATERIAL, C/O THE BARCOCK & WILCOX COMPANY, P.O. BOX 351, STIRLING AVENUE, BARBERTON, OHIO.					
VENDOR TO FURNISH NINE /9/ COPIES OF NOTARIZED TEST CERTIFICATES WHICH INDICATE ACTUAL CHEMICAL AND PHYSICAL, CHARPY IMPACT /IF REQUIRED/ AND ALL OTHER REQUIREMENTS OF THIS ORDER, INCLUDING THE B&W COMPANY PURCHASE ORDER, CONTRACT AND HEAT NUMBERS. COPIES TO BE SENT TO THE B&W COMPANY, PURCHASING DEPT., P.O. BOX 351, STIRLING AVENUE, BARBERTON, OHIO.					
END USE- GOV. T CONTRACT NOBS-72401 WESTINGHOUSE PAD ORDER 56P-6504P					

# THE BABCOCK & WILCOX COMPANY

PURCHASE ORDER		CONTRACT	
NUMBER	47586	DATE	1/11/60
DATE	1/11/60	NUMBER	6100159293

BOTH PURCHASE ORDER AND CONTRACT NO. MUST BE SHOWN ON ALL ORDERS AND DRAWINGS RELATED TO THIS ORDER.

TERMS 1/2-10 N/30  
 1905001- 3000 CWT

GOVERNMENT ACCEPTANCE WILL BE BASED UPON VENDOR FURNISHING A NOTARIZED CERTIFICATE OF COMPLIANCE WHICH MUST INDICATE THAT MATERIAL IS IN ACCORDANCE WITH ORDER AND MUST INCLUDE HEAT NUMBERS OR SERIAL NUMBERS OF ITEMS AND THE DATES AND NUMBERS OF ALL PURCHASE ORDER CHANGES, ESPECIALLY THOSE INVOLVING CHANGES IN QUANTITY AND SIZE OF MATERIAL.

ONE COPY OF THE CERTIFICATE OF COMPLIANCE MUST BE INCLUDED WITH THE SHIPMENT.

ON THE DAY OF SHIPMENT, THREE /3/ COPIES OF THE CERTIFICATE OF COMPLIANCE IS TO BE FORWARDED TO THE BARCOCK & WILCOX COMPANY, PURCHASING DEPT., P.O. BOX 351, STIRLING AVENUE, BARBERTON, OHIO.

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END USE- GOV. T CONTRACT NOBS-72401 WESTINGHOUSE PAD ORDER 56P-6504P

Operators use tapes to make up completed 8-part purchase order, and eight additional copies for interested departments. Teletype's speed is 100 words a minute.

This continuous-form requisition comes off purchasing's teletype machine, along with a punched tape containing the same information. The data comes over the wire from general production control. Buyer completes the form by hand.





Operator feeds completed tapes into machine to produce additional purchase order copies for interested departments.



Completed 8-part purchase order is pulled apart and delivered to buyer for signature. Original copy is sent to vendor.

vendors and company departments. This did not include the time required for receiving and distributing materials when they were delivered. To speed the flow of information, B&W put the writing and transmission of data entirely on teletype equipment.

#### Teletype Speeds Requisition

Today, information moves in and out of requisitioning in one day, takes another day to go through purchasing to vendors and interested departments. In receiving, it is only necessary to check the material and move it immediately to its destination.

The automation starts in the two prime requisitioning areas—contract engineering and general production control. There, requisitioners translate bills of materials to requisition work sheets. These are preprinted forms which simply require the filling in of blanks. When clauses and additional special instructions must be written in, previously a major operation for the writer, he simply enters a number. To write the clause, the teletypist merely inserts a corresponding master punched tape in her machine. There are master tapes for all frequently used specs and clauses.

When the teletypist gets the requisition work sheet she pulls the necessary tapes for automatic entry of the preprinted and numbered information and inserts the other data manual-

ly. In this way she prepares a proof copy of the requisition and a by-product tape. The proof is sent back to the requisitioner with the original for checking and noting corrections. Unless the corrections are major ones, they will be made on-line during the transmission of the requisition to purchasing.

In the teletype room, approved and corrected requisitions are matched with the by-product tapes which are then used to transmit the information to purchasing. At the same time hard copies go to the requisitioner to advise him that the order has been sent to purchasing. He holds them until he gets copies of the corresponding purchase orders.

#### Cuts Errors, Processing Time

Although general production control and contract engineering are separate functions, both transmit requisitions to purchasing. In addition, contract engineering also sends requisitions to general production control to give it a complete picture of each production order. General production control can order about 6,500 different items. It has some 200 master tapes on file. Another 100 are in contract engineering.

An average contract requisition runs to three or four pages but some may have as many as 15 to 25 pages. In production control the current rate is about 80 requisitions per day with 100 per

day anticipated. This volume is handled by fewer personnel than before the new system was installed. Similarly, in contract engineering one girl does almost double the work of four and is turning out 130 to 150 pages a week with some 1700 characters per page. In both departments the error frequency has been reduced and close to four days have been cut from the processing time.

#### How to Prepare a P.O.

Similar efficiencies have been realized in the purchasing department itself. There, a teletype receives the data and enters it on a hard copy of the requisition. At the same time the machine creates a by-product tape which is attached to the hard copy. This information is body copy only—no heading information such as vendor, shipping instructions, etc., has been entered at this point.

When the buyer receives the teletype requisition, he selects the vendor, either from a list of previously approved sources or from an analysis of quotations which he may specifically solicit. He then inserts the destination, method of transportation, routing, terms, price, f.o.b. point, quotation reference, and copy distribution. He revises the description or specification when necessary. On return to the teletype room, the typist removes the tape from the pocket on the back of the requisition and

(Please turn to page 147)



# Recent Decisions in Purchasing Law

By Albert Woodruff Gray,  
Legal Editor

## Salesman's Assurances Held Not Part of Contract

AT the time a Texas dealer placed an order for merchandise the manufacturer's salesman assured him that if the goods were not sold during that season the manufacturer would accept their return, credit the dealer with the invoiced value, and move the goods to another location.

When at the end of the season the manufacturer refused to credit the unsold merchandise, the dealer sued. His defense was the salesman's oral assurance that the unsold goods might be returned. The court, however, ruled against the dealer on the basis that a separate oral agreement is not admissible.

"If the contract is plain and unequivocal in its terms," the court said, "the buyer is ordinarily bound thereby. It is the duty of every contracting party to learn and know its contents before he signs and delivers it. He owes this duty to the other party to the contract because the latter may and probably will pay his money and shape his action in reliance upon the agreement.

"To permit a party when sued on a written contract to admit that he signed it but to deny that it expresses the agreement he made, or to allow him to admit that he signed it but did not read it or know its stipulations would

absolutely destroy the value of all contracts.

"The purpose of the rule is to give stability to written agreements and to remove the temptation and possibility of perjury which would be afforded if parol evidence was admissible." *Consolidated General Products v. Cater*, 336 S.W. 2d 639, Texas, May 18, 1960

## Dealer's Oral Warranty Ruled Not Valid

A STANDARD order form for harvesting equipment reads: "It is understood that the Allis-Chalmers machinery is sold by the dealer with the standard warranty of the manufacturer set forth in full on the reverse side hereof. This warranty is the only warranty, either express or implied or statutory, upon which said machinery is sold."

On the reverse side, under the heading "Warranty", is the statement: "It is understood that the Allis-Chalmers machinery is sold by the dealer with the following standard warranty of the manufacturer, and no other." This is followed by an agreement to repair or replace defective parts within a specified time.

When a purchaser brought suit for damages for the breach of an oral warranty made by a local dealer, the court denied recovery. It said: "The contract in question

contains a warranty clause on the front page immediately above the signature of the purchaser in the same type as that employed generally throughout the contract. The purchaser could have and is charged with the responsibility of having read same before affixing his signature thereto.

"The liability of a manufacturer under the express terms of the limited warranty could not be extended by the dealer beyond those of the agreement. Any other warranty is excluded." *Sanders v. Allis-Chalmers Mfg. Co.*, 115 S.E. 2d 793, South Carolina, August 15, 1960

## There Is Only One Prevailing Price

FOR nine years a manufacturer sold automobile tires and tubes to two retail chains at "prices prevailing on the date of shipment." Then, in 1958, he allowed combined volume discounts up to a maximum of 7½ percent of the purchase price, in order to stimulate buying initiative.

Four months later the manufacturer offered a new pricing plan to one of the retail chains, but not to the other. The new prices would be "prices prevailing on date of shipment" less 10%.

Subsequently, the manufacturer offered a new contract to

the other chain but the 10% reduction was not included. The operator promptly sued and asked the court for an interpretation of the phrase "prices prevailing on date of shipment." He contended that the 10% allowance to the competitor was a breach of the agreement. The federal appellate court upheld this view, stating that the manufacturer's departure from the established pricing system by giving one customer a lower price without a corresponding reduction to the other, was a violation of the agreement.

"Considering the language used in the pricing clause of the contract—'prices prevailing on date of shipment'—we think it necessary if possible to enforce the instrument according to the manifest meaning of the language used," said the court.

"The term 'prevailing prices' would seem to mean prices which at any particular time are charged by a seller for a certain product.

"We think it would be illogical to hold that a seller should offer one of its two customers a lower price than the other for the same item when both have contracts to receive goods 'at prevailing prices.' There can be only one prevailing price at a given time and in the present context it would fairly mean the lowest price for the commodity which the seller gives to either of its

two largest buyers in conformity with a contract provision for sales 'at prevailing prices.'"

*Cordovan Associates, Inc. v. Dayton Rubber Co.*, 279 Fed. 2d 289, Ohio, June 6, 1960

## What Is "Merchantable Quality"

THE Supreme Court of Connecticut recently asked this same question. The phrase is used in the sales act of that state when it provides that there is no implied warranty of quality or fitness of goods sold, except: "When the goods are bought by description from a seller who deals in goods of that description, whether he is the grower or manufacturer or not, there is an implied warranty that the goods shall be of merchantable quality and such warranty shall extend to all members of the buyer's household."

In its decision the court first pointed out that the section "relates only to goods bought by description from a seller who deals in goods of that description. The warranty requires that the goods be of merchantable quality. This means that they shall be reasonably suitable for the ordinary uses intended."

The court then explained that if the particular purpose for

which the goods are sold, is in fact the general purpose for which they were prepared and are commonly used, there is an implied warranty that the goods are of merchantable quality.

"The dealer who sells articles which ordinarily are used in only one way impliedly warrants fitness of use in that particular way. The warranty is merchantability," the court concluded.

*Crotty v. Shartenberg's* — *New Haven, Inc.*, 162 Atl. 2d 513 Connecticut, June 28, 1960

## Seller Reneges, Must Pay Brokerage

IN a sale of property in Idaho, brokers negotiated and prepared the sales contract. After it was signed by the sellers and endorsed, the contract went to the purchasers requiring that, "purchasers must sign this offer by April 21, 1959 or offer is void."

However, before the purchasers signed, the sellers asserted they had changed their minds and would not sell. In due course the brokers billed the seller for commissions. The sellers refused to pay, contending that since the contract had not been signed, no commissions were owed and the action could not be sustained.

When the brokers sued for their commissions, the court granted full recovery. It held that the seller, having already signed the contract, had defaulted. The brokers, therefore, had the right to enforce their part of the contract.

"When one party to a contract gives notice to the other party before the latter is in default, that he will not perform such contract on his part," said the court in this decision, "and does not retract such notice before performance on his part is due, such other party is entitled to enforce the contract without previously performing or offering to perform the provisions of the contract upon his part in favor of the former party. The law does not require a vain and idle gesture."

*Wackerli v. Martindale*, 353 Pac. 2d 782, Ida., July 5, 1960. ► END



"To be of merchantable quality, goods must be reasonably suitable for the ordinary uses intended."

# Lubricants That Survive



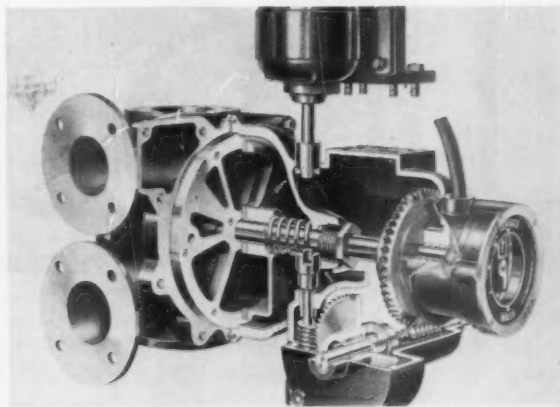
**Extreme Heat.** At Erwin Mills textile plant, Cooleemee, N. C., bearings on the shaft of a revolving drier operate in an ambient temperature of 300 F and meet hot steam entering through the shaft. Bearing lubrication was reduced from an every-other-week job to a twice-a-year job with silicones. Silicone lubricants withstand heat up to 450 F . . . stay on the job where ever heat is a problem, such as oven conveyor systems, exhaust fan bearings and heat sealing equipment.



**Caustic Contact.** Dow Corning Valve Seal, a non-reactive valve lubricant, prevents sticking and leakage. One use: to assure ease of operation and proper sealing of valves on railroad tank cars carrying chemicals. In process plants, too, inert silicones coat the valve seal and mechanism . . . resist corrosion . . . assure a leak-proof seal that lasts. Another use: to keep bolt threads from binding at temperatures to 600 F, ease annual teardown of process equipment.



**Extreme Cold.** Silicone lubricants don't turn stiff with cold. Even at 100 degrees below zero, they keep things rolling. For plastic and metal bearings in refrigerators and household freezers . . . for conveyor bearings in commercial freezers and cold storage areas . . . silicones virtually assure lifetime lubrication. Silicones also provide an economical way to lubricate moving plastic parts on appliances and toys. Many silicone lubricants are practically colorless . . . won't soil hands or clothes.



**Conditioning Chemicals.** Rubber and bronze parts located in multi-port valves of water conditioning equipment made by Permutit Company are lubricated with a silicone compound. Highly water repellent, silicones assure long-lasting seals, won't react with or contaminate chemicals passing through, won't attack rubber, and protect bronze against corrosion. Silicone greases, oils and compounds are outstanding special purpose lubricants in new equipment designs and in the maintenance of production equipment.

New brochure—all about silicone lubricants. Send for your free copy today. Address Dept. 7415.



**Dow Corning CORPORATION**  
MIDLAND, MICHIGAN

ATLANTA BOSTON CHICAGO CLEVELAND DALLAS LOS ANGELES NEW YORK WASHINGTON, D. C.

For More Facts Write No. 199 on Information Card—Page 32

*Profit by the big advantage  
plant after plant is already using . . .*

**Hit that new high in**  
*with*

# B14



*New Norton  
Resinoid Bonded  
**DISCS***





# disc grinding

Throughout the country plant after plant is showing real enthusiasm for the new economy — and profits — the Norton-developed B14 resinoid bond has brought to the finest disc wheels ever made.

Development of the new B14 bond involved not only improvements in bond material but entirely new processing.

It took several years to perfect these changes. It also took many months to complete nationwide testing of the new B14 discs, on all types of disc grinders — horizontal or vertical spindle, single or double — on jobs ranging from snagging to precision finishing, and on ferrous, non-ferrous and non-metallic materials. Also, the tests were entirely comparative — not only against competitive wheels but against Norton discs which were then standard.

Results of this across-the-board testing are outstanding. The new B14 discs have proved beyond question their ability to grind more workpieces per disc . . . faster and better, with fewer dressings . . . and with constant uniformity throughout extra long disc life.

Let new B14 discs bring you proof of better lower cost surfacing. Have your Norton Man, a trained abrasive specialist, study your requirements and make trial runs of the B14's you need — solid discs or segmental, ALUNDUM\* or CRYSTOLON\* abrasive. Or get details from your Norton Distributor. NORTON COMPANY, General Offices, Worcester 6, Mass. Plants and distributors around the world.

\*Trade-Marks Reg. U.S. Pat. Off. and Foreign Countries

## A few of very many reports from Norton customers . . . PROVING B14 DISCS THE BEST

**JOB:** Rough grinding iron castings, 3½" x 2½",

**REPORT:** B14 37 CRYSTOLON wheel ground 6,000 parts with one dressing. Best previous disc gave 4,500 parts with 4 dressings.

**JOB:** Surfacing cold rolled steel washers on double disc machine.

**REPORT:** B14 19 ALUNDUM discs impressive as best so far, with very even wear.

**JOB:** Through-feed grinding of 52,100 steel bearing races.

**REPORT:** B14 ALUNDUM disc very free cutting, clean and cool. Longer life than previously used Norton disc.

**JOB:** Double-disc grinding Alnico magnets.

**REPORT:** B14 mixed-abrasive wheel thoroughly approved for new orders.

**JOB:** Double-disc grinding abrasive sticks.

**REPORT:** B14 37 CRYSTOLON disc gave improved rate of cut. More abrasive sticks per disc-dressing.

**JOB:** Rough grinding miscellaneous parts on double end machine.

**REPORT:** B14 44 ALUNDUM disc performed better, lasted longer than all types.

**NORTON**  
ABRASIVES

W-2009

**Making better products . . . to make your products better**

**NORTON PRODUCTS:** Abrasives • Grinding Wheels • Machine Tools • Refractories • Non-Slip Floors — **DEER-MANNING DIVISION:** Coated Abrasives • Sharpening Stones • Pressure-Sensitive Tapes

For More Facts Write No. 200 on Information Card—Page 32

MARCH 27, 1961

91

## Products and Ideas

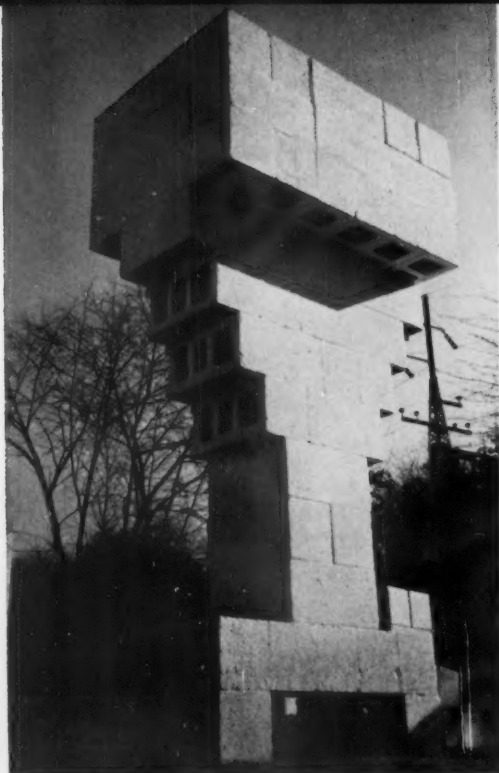
### Plastic Mortar Is Fast, Clean, Strong



In laying a concrete block wall, a thin strip of Threadline is extruded along both edges and the block is set immediately. Mortar remains workable for one to two hours; at 70 degrees F., it cures in 24 hours, reaches full strength in 72 hours.



The four-part mortar kit makes one gallon of batch—enough to lay 100 blocks. The batch can be mixed cleanly in three minutes by a portable mixer or by hand in a pail.



Five-block lintel (bottom) bonded by Raybestos Threadline mortar supports 60 cement blocks, over 1500 lbs. of dead load.



A completed wall panel can be lifted, jostled, and transported without breaking. The identical panel made with conventional masonry mortar was destroyed by a slight jolt of the crane when lifted.



## REDUCE CONVEYOR COST Pre-Engineered Logan Adapto Conveyors

This important volume belongs to your plant's purchasing files!

It's the complete Logan Adapto Unit Conveyor catalog and planner . . . the book from which you easily assemble industry's finest movable conveyors.

The Logan Adapto line is pre-engineered by the same specialists who create Logan custom-designed conveyor systems, famous for two generations. Assembly of adjustable system-related power and gravity Logan Adapto components is simple, easy, economical. Adapto Units are made and work-tested to Logan's one high set of conveyor standards.

"The Man From Logan"—our conveyor specialist stationed near you—will gladly help you save time

and money by putting Logan Adapto Unit Conveyors to work in your plant.

Send for free catalog today . . . and expect your first example of the prompt service for which Logan is well known. Twenty-eight illustrated pages of assemblies, parts, data, instructions.

# Logan Conveyors

For More Facts Write No. 201 on Information Card—Page 32

MARCH 27, 1961

**LOGAN CO.**, 752 Cabel St., Louisville 6, Ky.

- ☐ Please send our FREE copy of the Logan Adapto Unit Conveyor catalog.
- ☐ Have the Logan field engineer call us soon.

Name

Company

Address

City  State

For More Facts About Ad  
on Following Page Write in No. 202→







AT BLACK & DECKER

## Jalcase 100 Cold Finished Bars Speed Tool Parts Production 50%

Here's what happened when Black & Decker Manufacturing Co., Towson, Maryland, switched from alloy grades 4140 and 8620 to J&L Jalcase 100 cold finished bar steel in the production of shafts, gears and pinions for portable electric tools:

- The free machining quality of Jalcase speeded production on automatic screw machines 50%.
- The uniform machinability of high strength Jalcase eliminated ½ hour per shift from machine downtime for tool changes.
- The strength and hardness of Jalcase have practically eliminated the need for subsequent heat treating and resultant part distortion.
- The combination of these production economies plus the lower initial cost of Jalcase over alloy grade steel has greatly reduced parts costs.

The free machining qualities of J&L Jalcase 100 plus its high strength, hardness and stabilized stresses make it an ideal cold finished bar steel for producing high quality machined parts for the metalworking industries.

Jalcase 100 has a minimum yield strength of 105,000 psi in round bar sizes to 1½" diameter and a minimum yield strength of 100,000 psi in sizes to 3½" diameter.

Jalcase 100 has a minimum hardness of 248 Brinell up to 1½" and 241 Brinell for larger sizes. It is also available with a lead addition, designated as Jalcase 100-L, for applications requiring superior machinability.

For literature write direct to *Jones & Laughlin Steel Corporation, Department 480, 3 Gateway Center, Pittsburgh 30, Pennsylvania.*

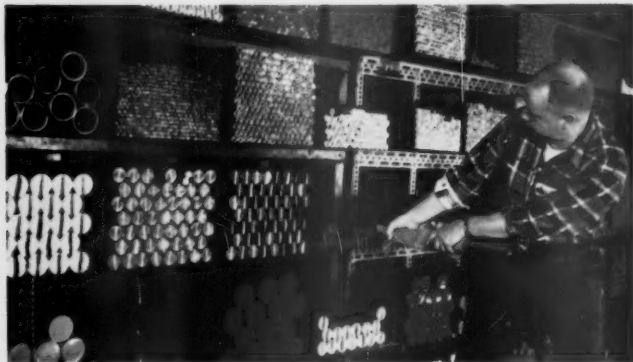


This Steelmark identifies products made of steel. Place this mark on your products. And—look for it when you buy.

### Jones & Laughlin Steel Corporation

PITTSBURGH, PENNSYLVANIA

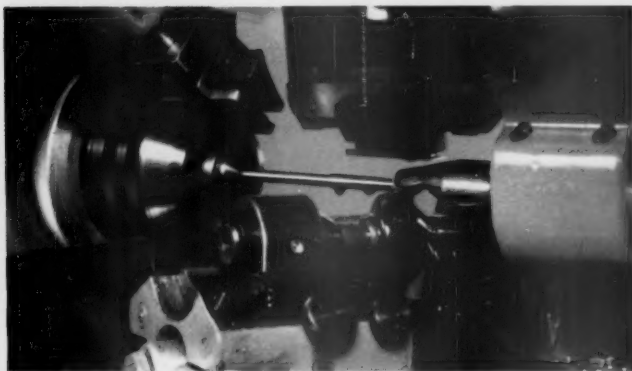
*Where cold rolled steels originated in 1859*



Black & Decker relies on a great variety of J&L bar stock. Over 30 electric tool parts are made from Jalcase 100 alone.

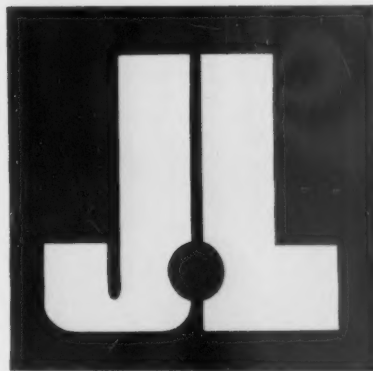


Made from Jalcase 100, these armature shafts are used in Black & Decker's ¼" Portable Electric Utility Drill.




▲ Black & Decker hobs pinion gears made of Jalcase 100 to tolerances of less than .001".

◀ Palletized trays transport a few of the many B&D machined parts that are made from J&L bar stock.



# STEEL

at  
**Southeast Missouri  
State College**  
(Cape Girardeau, Mo.)...



It's  
**Cordley**  
**WATER COOLERS**

Why take less... when CORDLEY offers more:

**More Cooler Experience.** Water Coolers are Cordley's only business, not a side line.

**More Assurance of Satisfaction.** Cordley's full 5-year guaranty is by far the strongest in the industry.

**More Help** in choosing the right coolers for your use... from Cordley's line of 28 job-rated models. 4196

#### The New CORDWALL LINE



No plumbing shows. Flush to the wall. No dirt can get behind. 3 wall models for installation at any height. 5 floor models. See Yellow Pages for nearest Cordley Distributor. Ask for Catalog 61.

#### **CORDLEY & HAYES**

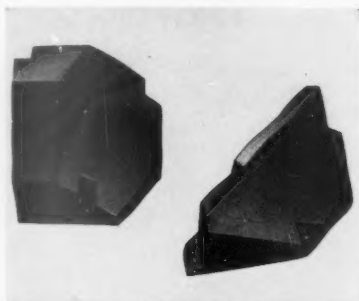
Specialists in water cooling since 1889

443 Park Avenue South, New York 16, N. Y.

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on Information Card—Page 32

## Products

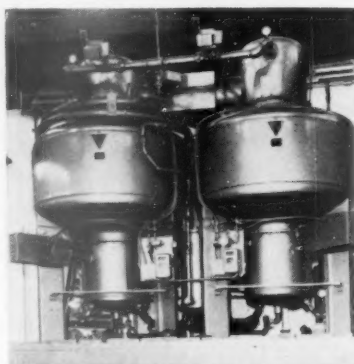
### Unique Process Forms Metal Enclosures



A unique process for forming contoured metal enclosures offers many advantages. Features of process, known as "Polyform," include: full contour forming to fit any multi-faced shape; elimination of expensive punch and die tooling costs; rapid and economical short runs; making possible efficient magnetic shielding of complex parts; forming thin, lightweight metal thicknesses in one piece. "Polyform" enclosures are custom manufactured to fit exact needs of aerospace and electronics industries. **Barber-Colman Co., Rockford, Ill.**

Write No. 18 on Information Card—Page 32

### System Recovers Solvent from Vapor



A system which recovers usable solvent from vapors usually lost during degreasing and cleaning operations cuts costs and improves working conditions. System captures solvent vapors by ducting them into tank with bed of activated carbon, returning

(Please turn to page 98)



## Number One in *Music Spring Wire*

- stock list  
available  
upon request



## NEW ENGLAND HIGH CARBON WIRE CORP.

MILLBURY, MASSACHUSETTS

**Offices and  
warehouses:** Cleveland  
Detroit  
Los Angeles  
Melrose Park (Chicago)  
and Millbury

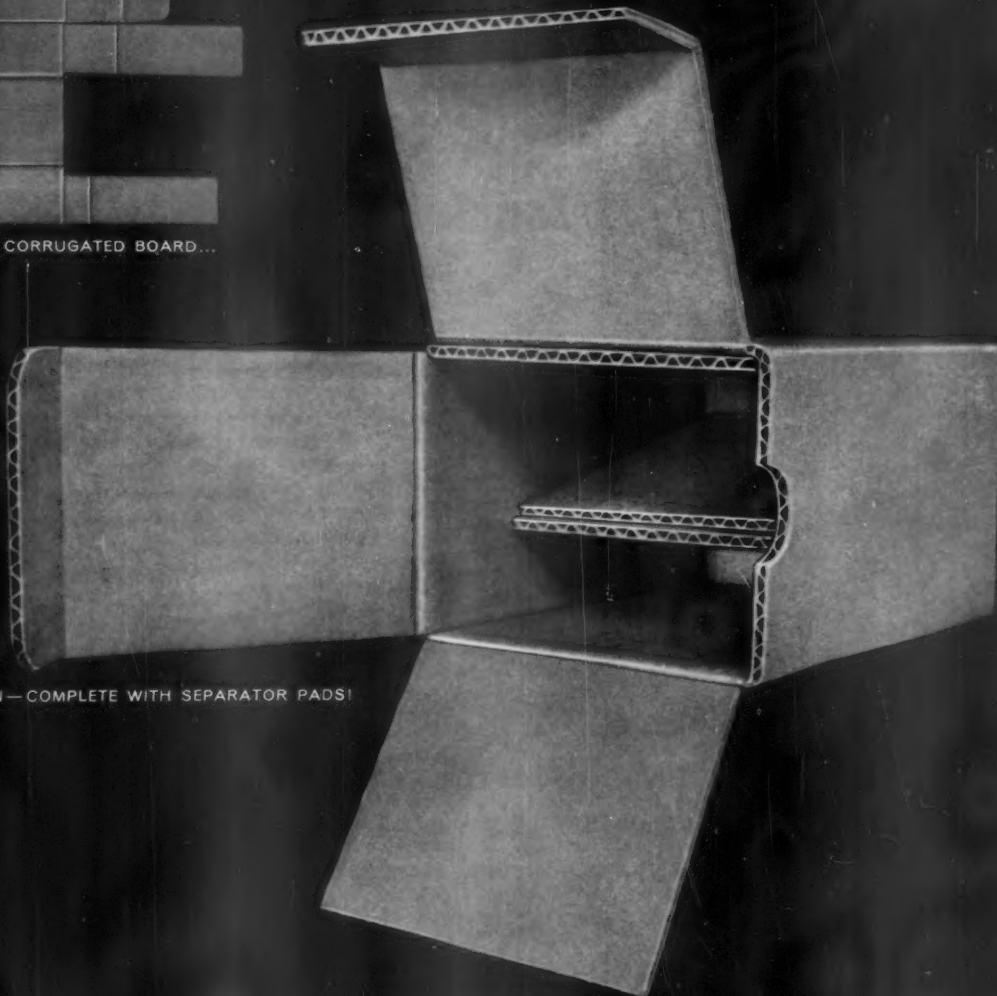
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ANOTHER REASON FOR CHOOSING  
OWENS-ILLINOIS CORRUGATED BOXES



FROM ONE PIECE OF CORRUGATED BOARD...



COMES THIS CARTON—COMPLETE WITH SEPARATOR PADS!



MR. STRONGBOX

LOCALIZED SERVICE FROM:

Atlanta, Ga.	Long Island City, N. Y.
Aurora, Ind.	Los Angeles, Calif.*
Bradford, Pa.	Madison, Ill.
Bristol, Pa.	Memphis, Tenn.
Chicago, Ill.	Mercedes, Texas
Dallas, Texas	Miami, Fla.
Detroit, Mich.	Milwaukee, Wis.
Flint, Mich.	Minneapolis, Minn.
Jacksonville, Fla.	Newark, N. J.
Kansas City, Mo.	Oakland, Calif.*
	Salisbury, N. C.

\*These plants are operated by  
National Container Corporation of  
California, subsidiary of Owens-Illinois.

## How Owens-Illinois corrugated boxes cut handling costs \$50,000

Design engineers at Owens-Illinois have developed a new corrugated box which saved \$50,000 in handling costs the first year for a manufacturer of electrical equipment. The entire carton—separator pads included—is made from one piece of corrugated board.

This customer formerly used a multi-piece box. Our single-piece construction simplified inventory, speeded up box assembly and packing which resulted in the above savings. We may be able to do the same for you.

PAPER PRODUCTS DIVISION  
FORMERLY NATIONAL CONTAINER

**OWENS-ILLINOIS**

GENERAL OFFICES • TOLEDO 1, OHIO





# ***BE SURE*** of correct screw or bolt tension with ***Snap-on*** Torque Driver

SNAP-ON torque drivers are available in three models with attachments to handle a wide range of jobs.

Model TQ5-025 — Capacity: 3 in-lb and 48 in-oz

Model TQ5-050 — Capacity: 6 in-lb and 96 in-oz

Model TQ5-1 — Capacity: 12 in-lb and 192 in-oz

## **for Aviation - Electronics - Radio - Television - Radar ... any precision assembly work**

This 1/4-inch drive SNAP-ON torque driver gives you precise control on jobs where screws or nuts must be tightened to exact tensions. Unit is extremely accurate, regardless of position, or manner of holding.

Easily read dial is calibrated in inch-ounces and inch-pounds and may be adjusted right or left for convenient use. Dial can be used two ways. Either set pointer at desired bolt tension and apply turning pressure to screw or nut until pointer reaches zero, or set pointer at zero and apply pressure until pointer reaches desired calibration on scale.

### **Available with variety of 1/4-inch drive attachments**

Standard screwdrivers — 3 1/4" long: 3/16"x.032", 1/4"x.032", and 5/16"x.042" tips

Short screwdrivers — 7/8" long: 1/4"x.032" tip

Clutch-type screwdrivers — 1 1/2" long: 1/4", 5/16" and 3/8" bit diameter

Phillips screwdrivers — No. 1 and No. 2 bits in various lengths

Single hex sockets — 9 sizes, 3/16" to 1/2"

Deep single hex sockets — 9 sizes, 3/16" to 1/2"

Double hex sockets — 8 sizes, 3/16" to 1/2"

Double square sockets — 3 sizes, 1/4" to 3/8"

Extensions, ratchet adaptors, etc.

A SNAP-ON Sales Engineer can give you more information on the value of torque drivers and TORQOMETERS® in your production or maintenance work. Well-stocked SNAP-ON Branches are located in every major industrial area. Check your phone book or write us for complete catalog listing the full range of wrenches and hand tools.

FOR ALL INDUSTRY  
**SNAP-ON TOOLS**  
8019-C 28th AVENUE • KENOSHA, WISCONSIN

For More Facts Write No. 206 on Information Card—Page 32

## **Products**

(Continued from page 96)

clean, reusable solvent after steaming and decanting process. Recovery as high as 66% is reported, with corresponding reduction in costs. System is available in 11 compact automatic and manual models. Ind. Div., Vic Mfg. Co., 1313 Hawthorne Ave., Minneapolis 3, Minn.

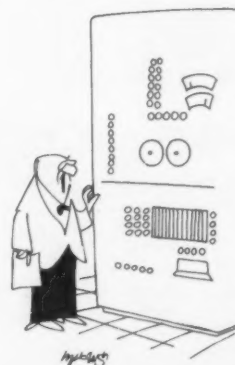
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## **Scale Increases Speed, Improves Reading Ease**



An industrial scale provides instant reading with no oscillation of indicating element. Illuminated projection type indication gives maximum reading ease from wide angle. Choice is offered of six avoirdupois or metric charts, with capacities up to 30 lbs and 15 kilograms. Both single-end and double-end shoe scoops are available. Tare knob provides fast, easy presetting adjustment where scoops or other material containers are used. Toledo Scale Corp., Toledo 12, Ohio.

Write No. 20 on Information Card—Page 32



"Nice fourth quarter, X-24. . ."

For More Facts About Ad on Facing Page Write in No. 207→





Now, all Spang CW Galvanized Steel Pipe carries this new marking which is your assurance of top-quality domestic steel pipe.

## Look for this marking when you buy steel pipe

### It spells two important advantages for you:

**1.** Pipe made in the United States of America must meet the high product standards set by definite technical specifications established for all pipe manufacturers. When you buy American-made steel pipe, you know you're getting a fine, standard product with good working characteristics and assured long life that will meet specified service requirements.

**2.** The SPANG CW Steel Pipe marking indicates that extra measure of quality. When you buy SPANG, you know you're getting a product that's carefully controlled during manufacturing and thoroughly tested and

inspected before shipping to assure you of a top-quality product, uniform throughout, for fast, economical, trouble-free installations.

Don't take chances by making second-rate installations with questionable foreign imports. It's worth your reputation to buy Steel Pipe made in U.S.A. Look for this SPANG marking on your next pipe order. Call your nearest SPANG Distributor for service.

SPANG Steel Pipe is one of the many fine products produced by *National Supply Division, Armco Steel Corporation, 2 Gateway Center, Pittsburgh 22, Penna.*



Steel's Symbol  
of strength,  
long life,  
and economy



New "Made in USA" marking on Spang CW Galvanized Steel Pipe is applied after pipe has been quick-quenched following galvanizing.

**ARMCO** National Supply Division

# Use These 2 GRIPCO® LOCK NUTS to

- Resist vibration • Save production time
- Speed application • Lower in-place cost

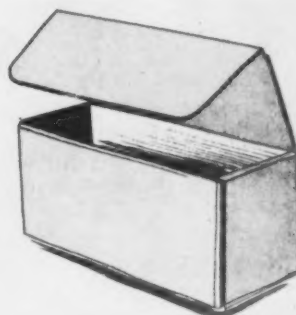


For better service, reliability and large stocks to ensure out-of-stock delivery on all catalogued items, use Gripco Fasteners on your products. Send for samples and NEW catalog today, or consult the yellow pages in your phone book under "GRIPCO" for the representative nearest you.

**GRIP NUT COMPANY** 130  
Subsidiary of Heli-Coil Corporation,  
Danbury, Conn.  
112 Maple Ave. • South Whitley, Ind. ☎ Phone: South Whitley 723-5111  
For More Facts Write No. 208 on Information Card—Page 32

## Products

**Extra-Strong Mailer  
Protects Damageables**



An extremely sturdy and versatile corrugated mailing box features double and triple thick construction at sides and ends, and a special tuck-lock feature for extra strength. Box is strong enough for a man to stand on, yet it can be hand-folded in five seconds and requires only one piece of gummed tape to seal it securely. Designed for hard-to-mail damageables such as bottles, (Please turn to page 104)

control your inventory of  
**STAMPED PARTS**



**DAYTON ROGERS**

**Metal Stamping Service**

SEND print, annual quantity, delivery schedule, for quote that will make you money.



**DAYTON ROGERS**  
*Manufacturing Company*

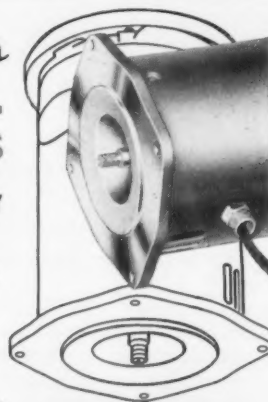
2824 — 13th Ave. So., Minneapolis 7-I, Minn.

For More Facts Write No. 209 on Information Card—Page 32  
100

**Franklin  
UNISEAL  
MOTORS**

- CUT PARTS AND ASSEMBLY COST OF YOUR PRODUCT
- REDUCE PRODUCT WEIGHT

HORIZONTAL  
OR VERTICAL  
MOUNTING



### QUIET, ISOLATED BEARING

UNISEAL design isolates the bearing from possible seal leakage. Seal installs in machined cavity separated from bearing by vented air space. Fan keeps dirt, moisture from bearing area.



Close-coupling of Franklin Motor to your product eliminates adapter casting, stub shaft, outboard bearing, coupling, etc. S/S motor shaft available to specifications.

½ through 2 h.p., 56-frame NEMA and special designs. With or less base. Horizontal or vertical operation.



**Franklin Electric Co., Inc.**  
BLUFFTON, INDIANA

For More Facts Write No. 210 on Information Card—Page 32  
PURCHASING



## CROPS OR POLES...BEARING MUSCLE HELPS PLANT 'EM BOTH!

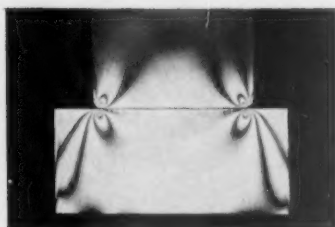
From plowing and seeding to digging post holes, the farmer depends on his tractor and implements for plenty of muscle, when and where needed. It's no wonder he looks especially for stamina and proven dependability in the new equipment he buys. For this reason, farm equipment manufacturers select vital components with great care. Leading tractor and implement makers, for instance, use Bower Roller Bearings

as original equipment. Bower's original contributions to advanced bearing design, plus painstaking quality control, reduce bearing maintenance and failure to a practical minimum . . . help manufacturers keep their equipment rolling. For your bearing requirements, Bower provides a complete line of tapered, straight and journal roller bearings. Bower Roller Bearing Division, Detroit 14, Michigan.

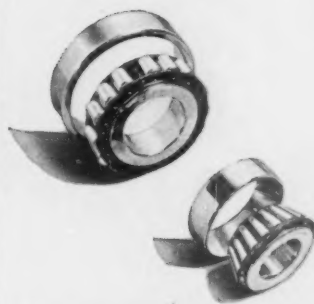
**BOWER**  
ROLLER BEARINGS

tapered  
cylindrical  
journal

DIVISION OF  
FEDERAL-MOGUL-BOWER  
BEARINGS, INC.



Roller bearing life and capacity are linked to stress distribution. Photoelastic studies indicate both magnitude and distribution of stress. Identical loads show dangerous edge-load stress build-up in conventional roller (left) . . . Bower "Profiled" roller (right) eliminates points of excessive stress concentration. Result—improved load-carrying capacity, increased life.



For More Facts Write No. 211 on Information Card—Page 32

For More Facts About Ad  
on Following Page Write in No.212→

MARCH 27, 1961

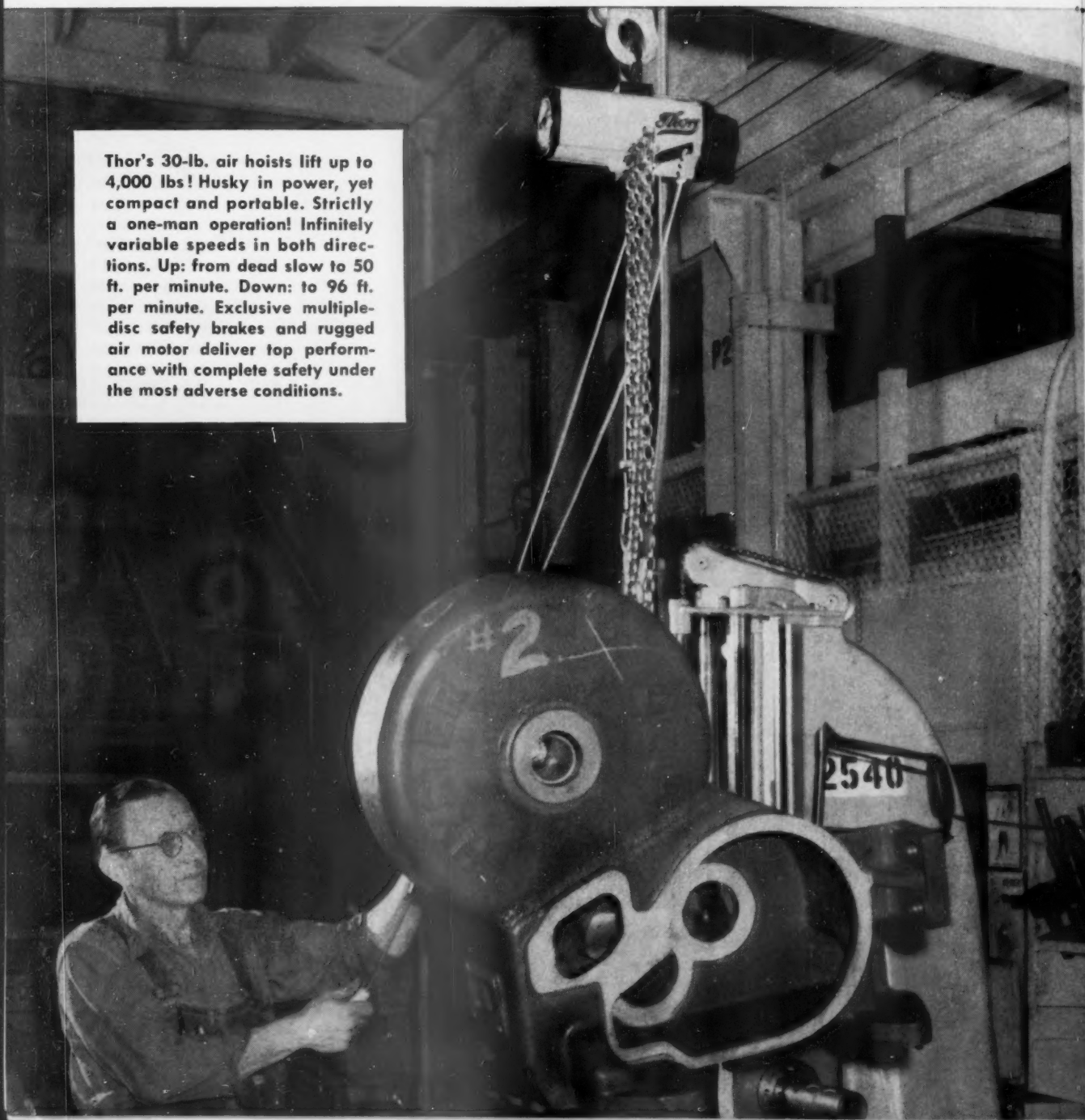
101



Lift up to 4000 pounds with new 30 lb. air hoists

# THOR INDUSTRIAL AIR TOOLS

Thor's 30-lb. air hoists lift up to 4,000 lbs! Husky in power, yet compact and portable. Strictly a one-man operation! Infinitely variable speeds in both directions. Up: from dead slow to 50 ft. per minute. Down: to 96 ft. per minute. Exclusive multiple-disc safety brakes and rugged air motor deliver top performance with complete safety under the most adverse conditions.



There are as many ways to save your money on these two pages as there are Thor models of the tools shown. Every hoist, hammer, chipper, nut runner and grinder has been designed with only one purpose—reduce your costs by increasing production. That's been Thor's business now for 68 years. Make it your business to find out how Thor can help you. A nationwide network of factory experts and distributors are at your service. The Yellow Pages list them. Or write us at Thor Power Tool Co., Aurora, Ill.



IT'S THOR POWER that does it! Thor air chipping hammers are famous for it. That, plus stay-on-the-job durability, economy and ease of operation. Complete selection of plate and spool valve chipping hammers; scaling hammers; riveting hammers.

LARGE CAPACITY HOISTS TO 3 TONS. Up to 90% faster. No jerking or vibrating. New, more powerful motors with mufflers. Thor has the hoist to complete it—any job faster and safer!

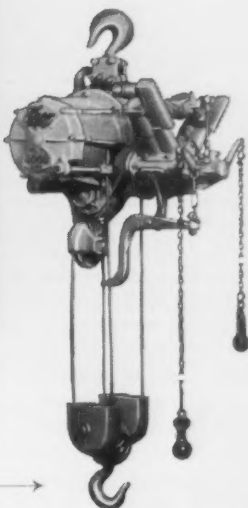
**THOR POWER TOOL COMPANY**  
AURORA, ILLINOIS



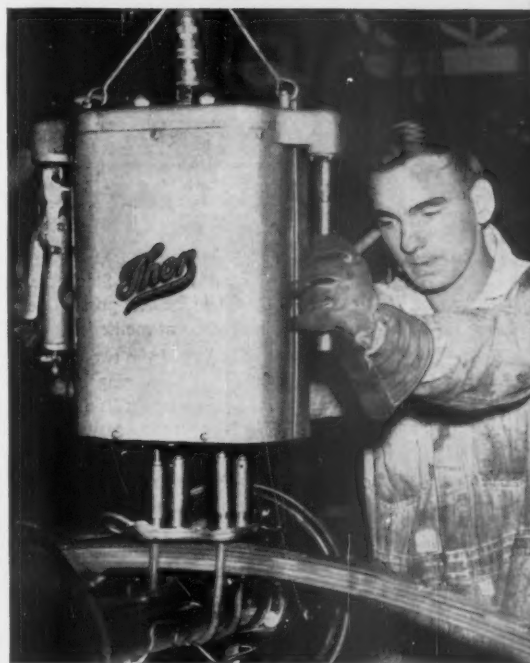
ATLANTA • BIRMINGHAM • BOSTON • BUFFALO • CHICAGO  
CINCINNATI • CLEVELAND • DENVER • DETROIT • HOUSTON  
INDIANAPOLIS • KANSAS CITY, MO. • LOS ANGELES • MILWAUKEE  
NEWARK • NEW YORK CITY • PHILADELPHIA • PITTSBURGH  
RICHMOND • ST. LOUIS • SAN FRANCISCO • SEATTLE  
TORONTO, ONT., CAN. • EXPORT DIVISION, NEW YORK CITY

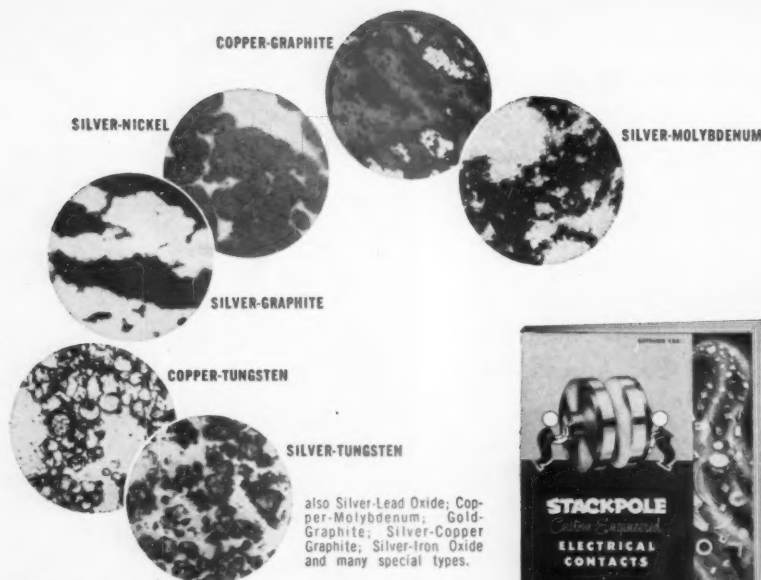
THOR AIR IMPACT WRENCHES save time and money on nut running, screw-driving, reaming, tapping, applying and removing studs. Capacities from  $\frac{1}{4}$ " to  $1\frac{1}{4}$ ".

THOR MULTIPLE AIR NUTSETTERS assure greater accuracy of torque control; definite savings over individual tool applications involving close patterns.



GET 50% MORE grinding power, 6 times quieter. Thor air grinders, available in forty models. Cup grinders, wire brushing machines and disc sanders.





(Above photomicrographs show typical contact cross sections at magnifications of from 100 to 500 times.)

also Silver-Lead Oxide; Copper-Molybdenum; Gold-Graphite; Silver-Copper Graphite; Silver-Iron Oxide and many special types.

here's helpful selection and use data on

## THE CREAM OF OVER 1500 CONTACT GRADES

Just off press, this 56-page Stackpole Booklet 12-A is a practical guide to composition contact grades, possibilities, properties, uses, shapes, sizes . . . even contact attachment methods.

By molding contacts from two or more metal or carbon-graphite powders, Stackpole Custom Engineering obtains a maximum of the advantages of each material and minimizes its disadvantages. The result is a greater overall efficiency than is generally possible with a single solid metal or alloy. Many of the most desirable contact metals cannot, of course, be alloyed satisfactorily *but they can be made from powders in almost any desired proportion.*

Composition contact engineering under exclusive Stackpole processes is characterized by its extreme flexibility in obtaining exact needed properties. This is best evidenced by the fact that over 1500 different grades representing different metallurgical mixtures have been produced for specific applications.

In various instances, their advantages permitted increased equipment ratings. In others, they paved the way to smaller, less costly equipment. Often, they simply combined long, trouble free operation with maximum economy.

This Booklet by no means attempts to present composition contacts as a universal answer to *all* problems. However, for design and production engineers who appreciate the basic logic behind them and who recognize that conventional contact types often leave something to be desired, it will provide a wealth of helpful information and guidance.

A copy may be obtained on letterhead request (ask for Booklet 12-A) to: STACKPOLE CARBON COMPANY, St. Marys, Pennsylvania.

# STACKPOLE

CUSTOM ENGINEERED CONTACTS



Also: BRUSHES for all rotating electrical equipment; GRAPHITE CHEMICAL ANODES BEARINGS • SEAL & CLUTCH RINGS • VOLTAGE REGULATOR DISCS • FRICTION SEGMENTS CERAMIC MAGNETS . . . and many other carbon, graphite and metal powder products.

For More Facts Write No. 213 on Information Card—Page 32

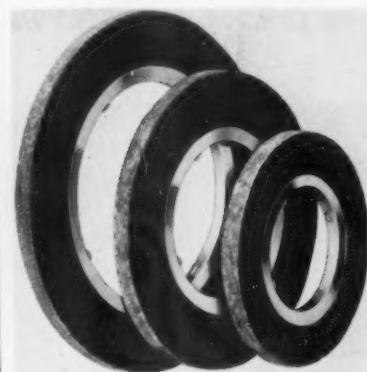
## Products

(Continued from page 100)

instruments, samples, etc., mailer comes in 50 sizes, ranging from 2 x 2 x 2 in. to 36 1/4 x 4 7/8 x 4 in. Mack-Chicago Corp., 1720 N. Damen Ave., Chicago 47, Ill.

Write No. 21 on Information Card—Page 32

## Plastic Bonded Brushes Give Precision Finish



Precision power finishing tools which represent a different concept in power brushes combine the efficiency of blended, straight wire cutting joints with plastic encapsulation for precise control of finishing action. Tools are available in wheel diameters of 4 to 12 in. Because of precisely controlled cutting action, peening or rolling of metal edges is kept to minimum or eliminated. Edge blends can be held to extremely close tolerances, making possible production finishing of pump gears and similar products requiring an .005 in. edge blend. The Osborn Mfg. Co., 5401 Hamilton Ave., Cleveland, Ohio.

Write No. 22 on Information Card—Page 32

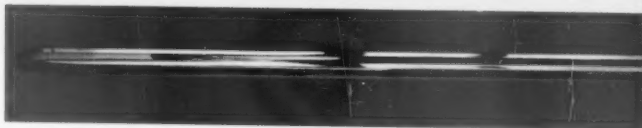
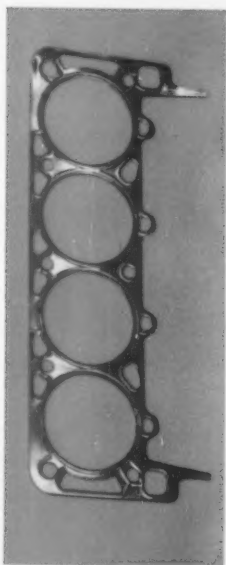
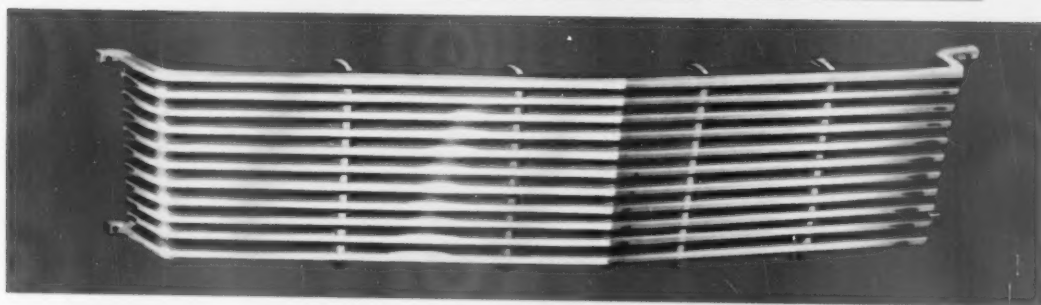
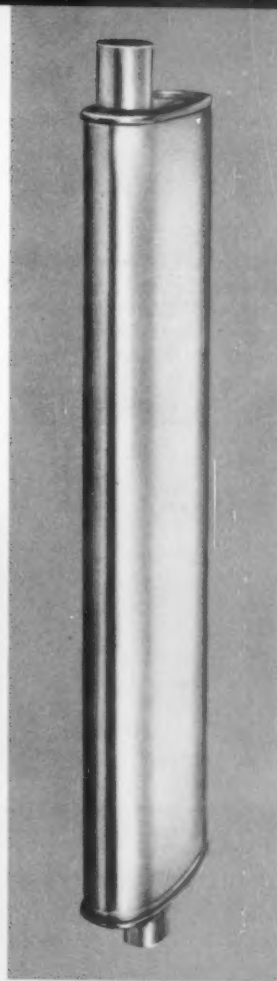
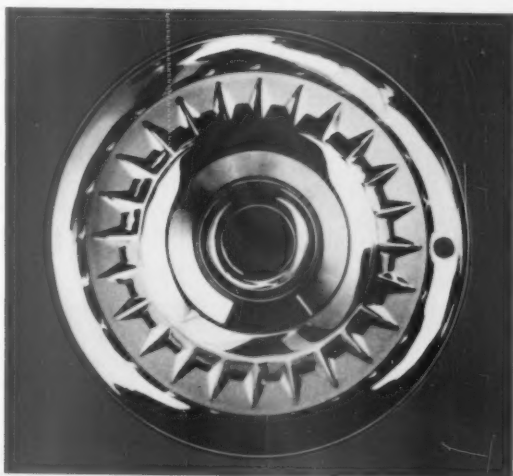


"I believe everyone needs a hobby. That's why I took this job."

For More Facts About Ad on Facing Page Write in No. 214→



*Automotive Horizons and Allegheny Stainless...*



# STAINLESS...a growing force in today's automotive design

The continued improvement in stainless steels and the increased demand of today's motorists for attractively styled automobiles that stay attractive have combined to throw open the door to more and more stainless automo-

tive applications. And longer warranties are pushing the trend to stainless. Here are some of the places you're most likely to find Allegheny Stainless on cars today... or maybe tomorrow.

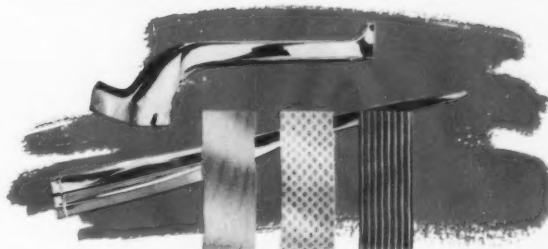
## Mufflers and Tailpipes



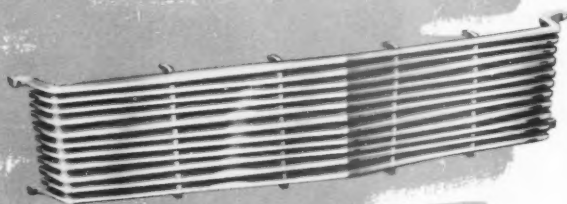
It's long been admitted by automotive people that a car shouldn't have one of its components operating in a hot, highly-corrosive environment without real corrosion resistance built into that part. But it's been a cost problem. Allegheny Ludlum's answer to the muffler problem is MF-1, a special, economical, ferritic stainless steel with good formability and corrosion resistance. Mufflers made from MF-1 have corrosion resistance built in. The stainless is solid. There will be mufflers made entirely from MF-1; others with MF-1 in the corrosion-susceptible internal wraps and baffles only. In either case, this corrosion resistance won't chip, peel, or burn off.

## Trim

Nothing enhances the beautiful lines of an automobile like sparkling brightwork, and nothing is a bigger chore to care for if it begins to spot and pit, rust or peel. With Allegheny Stainless trim, the original beauty is a beauty forever, stainless clear through and as corrosion resistant in its old age as the day it came off the line. Highly formable, gleaming bright, protective and dent resistant... stainless steel.



## Grilles



Nothing establishes the appearance of a car as much as the "expression on its face"... its front end-grille design. And nothing has more to contribute to the beauty, prestige, and crisp styling of the grille design than stainless steel. Allegheny Stainless in bar form, tubing, strip or patterned sheet lends itself to economical fabrication techniques... roll forming, expanded metal, spot welding... all important in any fabrication with as much resultant waste as present grille forming techniques. Automotive engineers, using some of these newer processes, are re-evaluating stainless.

## Hubcaps and Wheel Covers

Wheel covers and hubcaps demand a variety of metal characteristics and some are almost mutually incompatible... springiness, formability, dent resistance, brightness, corrosion resistance, scratch resistance, dimensional stability, stiffness... and more. Only one metal can come close to meeting all these requirements... stainless steel.



# STAINLESS...both on and over the automotive horizon

More and more stainless steel will appear on the cars of tomorrow. Everything points to it...today's conditions require it, so will tomorrow's. There's a definite trend to longer warranty periods. Competition will probably cause these warranties to be extended, and extended yet again. Parts simply must last longer to make these warranties possible.

There's also a trend toward less owner-maintenance, such as sealed lubrication systems, sealed engine coolant and automatic air conditioning systems, self-adjusting brakes, and the like. Design features such as these will continue. Again, competition will probably force the extension of such systems, and their inevitable elaboration.

Both trends lead to increased use of Allegheny Stainless. When parts just have to stand up in warranty, the call is for stainless. And when less owner-maintenance develops, the corrosion resistance and foolproof characteristics of stainless begin to pay off. Such hidden applications as fuel tanks, floor pans, surge tanks, radiator systems, etc., are already receiving a good, hard look from engineers as future stainless applications.

Other requirements are advanced by design problems and improvements in automotive interiors. Gleaming, durable stainless steel makes a sales feature of the constant, close-up scrutiny of even the most discriminating auto passenger. It stands up under constant handling, scuffing and lack of polishing and provides the modern automotive interior with the ornamental brilliance that is uniquely stainless.

Characteristic of stainless, as well, is its remarkable ability to withstand elevated temperatures for long periods of time, and to resist corrosive environments under such conditions. As early developmental work has shown, this admirably fits it for service on the numerous anti-smog devices now vying for official recognition. With service temperatures as high as 1800 F, with lead oxide, sulfur, catalysts, and other chemical corrosion a factor, no other material can be actively considered aside from a stainless, heat-resisting steel.

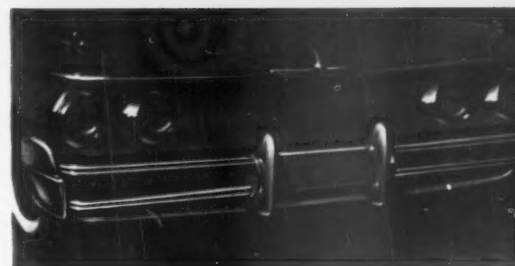
These are just a few thoughts on how Allegheny Stainless and the automotive designers will be working for motoring enjoyment...tomorrow or the next day.

## Bumpers

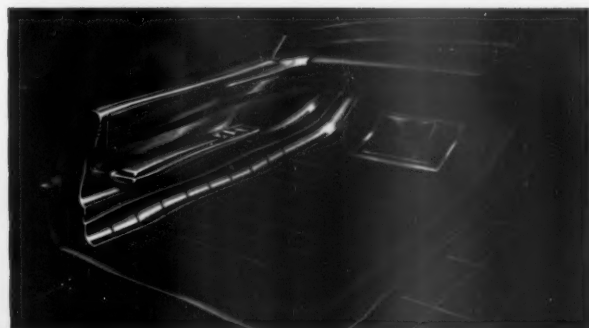
Possibly the most exciting design possibilities involve the front and rear of the modern automobile and the need for bumpers. Designers are faced with the task of integrating a massive section of metal into an overall design concept. Stainless steel can play a very great part in this effort, from both the esthetic and structural standpoints.

One interesting bumper technique is the fabricated bar bumper of stainless steel. Solid stainless bars offer an unmatched combination of beauty and strength, are easily formed, and may be worked into a variety of front-end designs featuring floating grilles and fabricated bumper guards. Stainless bars are repairable, by straightening, welding, buffing...all relatively simple operations.

Or, the protection and beauty of stainless steel may be obtained in a bumper with a metallurgically-bonded stainless cladding over the baser, underlying metal. Cladding offers the same exterior corrosion resistance and durable beauty as solid stainless designs. It won't scrape, peel, or rust. And, for maximum impact strength, and equal protection with lighter cross sections, some of the high strength stainless grades offer most interesting avenues for exploration.



## Interiors





# *hidden* The Value of Stainless in Automotive Design...

## IN DESIGN

...to designers, stainless steel has a highly utilitarian character. Designers feel better about working with its honest nobility. They prefer its reliability, its mathematical predictability, its strength, the look and feel of it, and its uniquely masculine character. It's a designer's metal.

Ask a housewife about this strong and handsome metal ...about its useful life, its strength, its corrosion resistance. She'll be able to tell you... she lives with it daily and sees it everywhere. She knows its beauty and prestige-building appeal, its dollar-value economy.

But aside from these obvious advantages, stainless steel has hidden values for those who really know it well, an added desirability based on reasons both functional and esthetic...practical and personal.

## IN STYLING

...to stylists, the rich luster and high prestige of stainless steel provide an irresistible creative challenge. They are intrigued by the limitless possibilities offered by its variety of textured surfaces and finishes, its ease of forming, bending, shaping. It's an expressive metal... a stylist's metal.

## IN MARKETING

...salesmen and marketing men know the value of stainless in automotive design. They know a customer's reaction to it. They know the universal appeal of stainless, the built-in customer acceptance based on its unqualified success in kitchen and other home appliances, in sporting goods, jewelry, and cutlery. It helps sell. It's a salesman's metal... a marketing metal.



ALLEGHENY LUDLUM STEEL CORPORATION

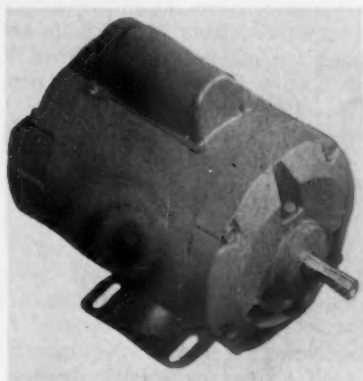


General Headquarters: Oliver Building, Pittsburgh 22, Pa.

EVERY FORM OF STAINLESS... EVERY HELP IN USING IT

## Products

### Fractional HP Motors Cut Weight One-Third



Fractional horsepower a-c motors feature a rolled steel frame with high-strength cast aluminum alloy shields, reducing over-all weight by one-third. Stator windings feature mylar slot insulation with cuffed ends, and complete stator is varnish-impregnated. Available from 1/20 to 3/4 hp ratings. Capacitor start, split-phase and polyphase units in

frame sizes 48 and 56; repulsion-start induction-run models in frame size 56. **Reliance Electric and Engineering Co.**, 24701 Euclid Ave., Cleveland 17, Ohio.

Write No. 23 on Information Card—Page 32

### Fabrics Protect Against High Radiated Heat

An aluminized silicone rubber-coated glass cloth protects against high radiated heat. Material reflects more than 90% of the infrared rays generated by a thermal source and absorbs much of the remaining heat, shielding complex electronic gear, personnel, heavy equipment, sensitive circuits and expensive cable. Fabrics .008 and .014 inches in caliper weigh 10 and 14 oz. per sq yd respectively and are suitable for use in continuous ambient temperatures ranging from minus 100 F to 500 F, and for short periods at 700 F. Third fabric will stand exposure to black body temperatures as high as 6000 F. **Irvington Div., Minnesota Mining and Mfg. Co.**, 900 Bush Ave., St. Paul 6, Minn.

Write No. 24 on Information Card—Page 32

### GEARING FOR PROFITS?

*Check Your Gear & Rack Requirements with Braun First!*

The direct action of sending prints with a request for quotation costs you nothing and may mean new savings for you in your gear purchases.

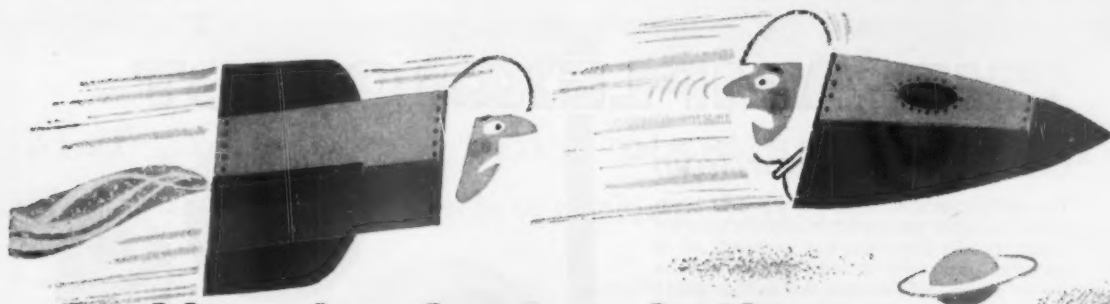
Send for our explanatory brochure "Gearing For Profits."

# BG

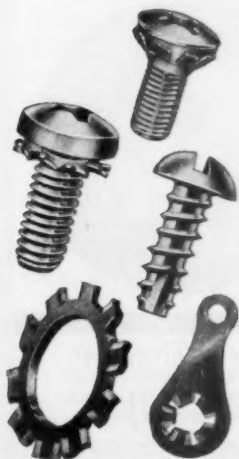
**BRAUN  
GEAR COMPANY**

243 Richmond Street  
Brooklyn 8, New York

For More Facts Write No. 215  
on Information Card—Page 32



## Need a fast solution to a fastener problem?



### YOU GET INDIVIDUALIZED SERVICE FROM THOMPSON-BREMER

We are one of the few fully integrated manufacturers of Sems, lock washers, thread-cutting screws, terminals and cold-headed specialties. Since our engineering services and components manufacturing are together under one roof, we are particularly well able to give you fast, individualized service at competitive prices. We'll bid on your specials requirements, or fill orders for standard items on short notice from the extensive line of EVERLOCK products stocked by your local distributor. Send for catalog and samples or call your EVERLOCK representative.

**Amf Everlock**  
INDUSTRIAL FASTENERS

Thompson-Bremer & Co.  
Division of  
American Machine  
& Foundry Company

Thompson-Bremer & Co.  
Dept. 6111

228 N. LaSalle St.,  
Chicago 1, Ill.

Please send me \_\_\_\_\_ EVERLOCK fastener catalogs and \_\_\_\_\_ sample sets of EVERLOCK industrial fasteners and cold-headed specialties.

Name \_\_\_\_\_ Title \_\_\_\_\_

Company \_\_\_\_\_

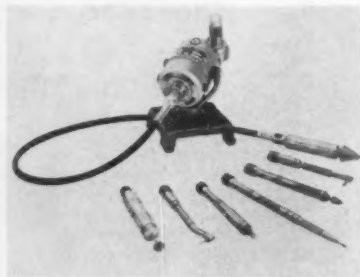
Street \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

For More Facts Write No. 216 on Information Card—Page 32

## Products

### Miniature Power Tool Does Man-Size Job



A miniature bench-type flexible shaft machine does a man-size job. Incorporating a continuously variable foot rheostat, handy unit features 1/10 hp universal motor with two separate speed ranges. Gear box gives high torque at low speeds. High speeds up to 12,000 rpm can be had on direct drive. Tool weighs less than 9 lbs. complete, plugs into any 110 volt a-c or d-c outlet. Wide selection of pencil-slim and miniature angle-type hand pieces are quickly in-

terchangeable. Machine has uses as general production, toolroom or maintenance tool and can handle materials ranging from metal to glass. **Foredom Electric Co., Inc., Bethel, Conn.**

Write No. 25 on Information Card—Page 32

### Machine Strips Braided Wire Shielding



A machine for stripping braided wire shielding from coaxial cable and shielded wire eliminates hand operations and can save 184 man hours per machine per day. Ma-

chine also enables manufacturer to standardize the length of shielding cut. Unit is safe, sturdy and exceedingly easy to operate without training. Stripper comes in two models, one for cutting shielding lengths from 1/2 to 1 1/2 in. and one for cutting lengths from 1/2 to 3 1/4 in. **Cadre Industries Corp., Box 150, Endicott, N. Y.**

Write No. 26 on Information Card—Page 32

### Snow-Detecting Device Activates Equipment

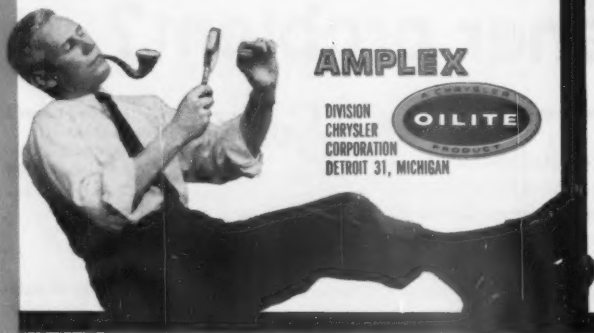
An instant warning device which detects snow, freezing rain or ice conditions can be used to activate necessary equipment, such as gas or electric heaters, warning signs, etc. Detector is compact and can be installed in a few minutes without special tools. It operates only when needed and requires no maintenance. Unit is made for use on 115 volt a-c, 60 cycle; or 12 volt, d-c on special order. **The Rails Co., 187 Maplewood Ave., Maplewood, N. J.**

Write No. 27 on Information Card—Page 32

## THE AMPLEXOLOGIST

### dreams up a gear train

The Amplexologist designed this gear train (plus ten other parts) especially for powder metal production—at the request of a manufacturer who called him in at the design stage. All (except the helical gear) are finished precision parts which require only shaving. Estimated savings; 86%. Sound interesting? Call the Amplexologist.



**AMPLEX**

DIVISION  
CHRYSLER  
CORPORATION  
DETROIT 31, MICHIGAN



SEND FOR THE SECRET  
OF THE  
AMPLEXOLOGIST'S SUCCESS

1 ENGINEERING MANUAL  
45 pages of technical information: How to determine correct applications for powder metal parts, bearings, filters.

2 NEW BEARING STOCK LIST  
20 pages. 1066 standard sizes of Oilite self-lubricating bearings—bearing material. Selection guide, engineering data.

For More Facts Write No. 217 on Information Card—Page 32

For More Facts About Ad  
on Facing Page Write in No. 218→





## M&T produces a vinyl plastisol so tough it's used as a dishwasher lining

**AMONG** the tough jobs for which M&T vinyl plastisols are suited, one of the toughest is that of a dishwasher lining.

Consider the service conditions: scalding hot water, mixed with highly alkaline cleaners which are death on ordinary coatings, is hurled with high velocity against the tub. As if this weren't enough, the lining has to be resistant to food stains, avoid cutting and impact damage from accidentally dropped or broken objects. Equally important, it should be non-aging, last the life of the machine.

Which explains in part why the product engineers selected M&T's plastisol. It possesses the

quality to do the job...proved by torture testing the equivalent of 5 to 15 years' service.

The other factor which led to this choice was based on value analysis. A plastisol such as this could also do a better job than the former lining material, and permitted a redesign of the tub wall to save metal and cut costs.

Moreover, M&T has the facilities to maintain consistent quality; and the plant capacity to deliver the required volume, in the precise colors, *on schedule*.

Avail yourself of this kind of service and product performance when *you* purchase plastisols. Send for an M&T Man.



**coatings • chemicals • minerals • detinning  
plating products • welding products**

METAL & THERMIT CORPORATION, General Offices: Rahway, New Jersey



SECURE YOUR  
PRODUCT QUALITY  
with

## HUBBELL

\*COLD HEADED—ROLLED THREAD

## FASTENERS



Hubbell c/h\* turns  
out parts faster,  
better and at  
less cost than screw  
machining ever could  
... they're stronger,  
more accurate and  
more uniform.

Don't be a slave to  
screw machine waste!  
Check Hubbell c/h\*  
today. Free part  
analysis. No  
obligation.

**HARVEY  
HUBBELL,**

INCORPORATED  
MACHINE SCREW DEPARTMENT  
BRIDGEPORT 2, CONNECTICUT

For More Facts Write No. 219  
on Information Card—Page 32

## Products

### AC/DC Welding Unit Has 100% Duty Cycle



An AC/DC silicon rectifier welding machine with a full 100% duty cycle is an industry first. Rated at 500 amps., 100% duty cycle, welder is designed to replace 600 amp. motor-generator sets on semi-automatic submerged arc welding applications. Unit is especially suited for large butt and fillet welds, the kinds used in heavy metal fabrication. A-C section is ideal for use with heavy iron powder electrodes. D-C side, in addition to use on submerged arc application, can be utilized where hand arc d-c welding is needed. A. O. Smith Corp., Welding Products Div., Milwaukee 1, Wisc.

Write No. 28 on Information Card—Page 32

### Conveyor Control System Automates Many Lines



A centralized, fully automatic control system automates package, part, unit or container conveyor lines. Magnetic control system combines low installation cost with great flexibility for small and medium size operations. Control systems can be operated from control "dispatcher" unit, or by remote punch card or tape command. Result is automation to

(Please turn to page 114)

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immediate  
delivery  
of



**SILICONE RUBBER**  
Sheets • Sponge •  
Coated Fabrics •  
Conductive  
Gaskets •  
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**TEMP-R-TAPES**  
Pressure sensitive,  
TEFLON, Fiberglass  
and Silicone  
Rubber Tapes

- |                              |                            |
|------------------------------|----------------------------|
| CALIFORNIA                   | SR General Asbestos Gasket |
| T A. B. Boyd Co.             | Mfg. Corp.                 |
| SR Los Angeles-RI 9-8361     | St. Louis-CH 1-5013        |
| San Francisco-UN 3-2341      | T Frank W. Winne & Son     |
| T R. Hurwich Co.             | Kansas City-BA 1-6880      |
| Berkeley-TH 5-7972           | NEW YORK                   |
| SR Miller Gasket Co.         | T Balanol Corp., Sub. of   |
| Huntington Pk.-LU 3-4721     | Bearings Inc.              |
| T Western Fibrous Glass      | Buffalo-MO 4425            |
| Products Co.                 | T Chamberlin Rubber Co.    |
| Los Angeles-LU 8-3211        | Rochester-BA 5-9510        |
| San Francisco-SU 1-5967      | T Mercer Rubber Corp.      |
| CONNECTICUT                  | SR New York-BA 7-0140      |
| SR Auburn Mfg. Co.           | T Mitchell-Rand Mfg. Corp. |
| Middletown-DI 6-6631         | New York-CO 7-9264         |
| T E. J. Davis Co.            | NORTH CAROLINA             |
| New Haven-MA 4-5125          | T Southern Rubber Co.      |
| FLORIDA                      | SR Greensboro-BR 2-4567    |
| SR East Coast Rubber &       | OHIO                       |
| Plastic Co.                  | T Cincinnati Gasket,       |
| Hialeah-MU 1-3558            | SR Packing & Mfg., Inc.    |
| T Tri-Point Plastics, Inc.   | Cincinnati-PA 1-5420       |
| SR St. Petersburg-WA 1-2156  | OREGON                     |
| GEORGIA                      | T A. B. Boyd Co.           |
| T Electrical Insulation      | SR Portland-BE 5-6649      |
| Suppliers, Inc.              | T Western Fibrous Glass    |
| Atlanta-JA 5-2707            | Products Co.               |
| SR F. D. Farnam Co.          | Portland-CA 6-6085         |
| Chicago-CO 1-1320            | PENNSYLVANIA               |
| T J. J. Glenn & Co.          | SR Shields Rubber Corp.    |
| Chicago-ST 2-9667            | SR Pittsburgh-AT 1-8200    |
| KENTUCKY                     | T Stockwell Rubber Co.     |
| T General Rubber & Supply    | SR Philadelphia-GA 6-3200  |
| SR Louisville-ME 5-2806      | T Frank W. Winne & Son     |
| MARYLAND                     | Philadelphia-MA 7-8080     |
| T Robins Rubber Division     | TEXAS                      |
| SR Baltimore-SA 7-6275       | T American Packing &       |
| MASSACHUSETTS                | SR Gasket Co.              |
| T Greene Rubber Co., Inc.    | Houston-WA 6-9607          |
| SR Cambridge-KI 7-7655       | T Busacker Electronic      |
| T John G. Shelley Co., Inc.  | Equipment Co., Inc.        |
| SR Wellesley Hills-CA 7-0900 | Houston-JA 9-4626          |
| MICHIGAN                     | VIRGINIA                   |
| SR Detroit Die Cutting Co.   | SR Richmond Rubber Co.     |
| Hazel Park-LI 8-9600         | Richmond-MI 8-8326         |
| MINNESOTA                    | WASHINGTON                 |
| SR Precision Gasket Co.      | T A. B. Boyd Co.           |
| Hopkins-WE 8-6307            | SR Seattle-MA 2-6545       |
| T D. A. Schultz Co.          | T Western Fibrous Glass    |
| SR Minneapolis-FE 9-7701     | Products Co.               |
| MISSOURI                     | Seattle-MA 4-7250          |
| T Hanna Rubber Co.           | WISCONSIN                  |
| SR Kansas City-BA 1-9600     | T N. L. Kuehn Co.          |
|                              | SR Milwaukee-WO 4-3300     |

SR—Stands for all CHR stock item silicone rubber  
products and allied products exclusive of Temp-  
R-Tapes.  
T—Stands for Temp-R-Tapes.



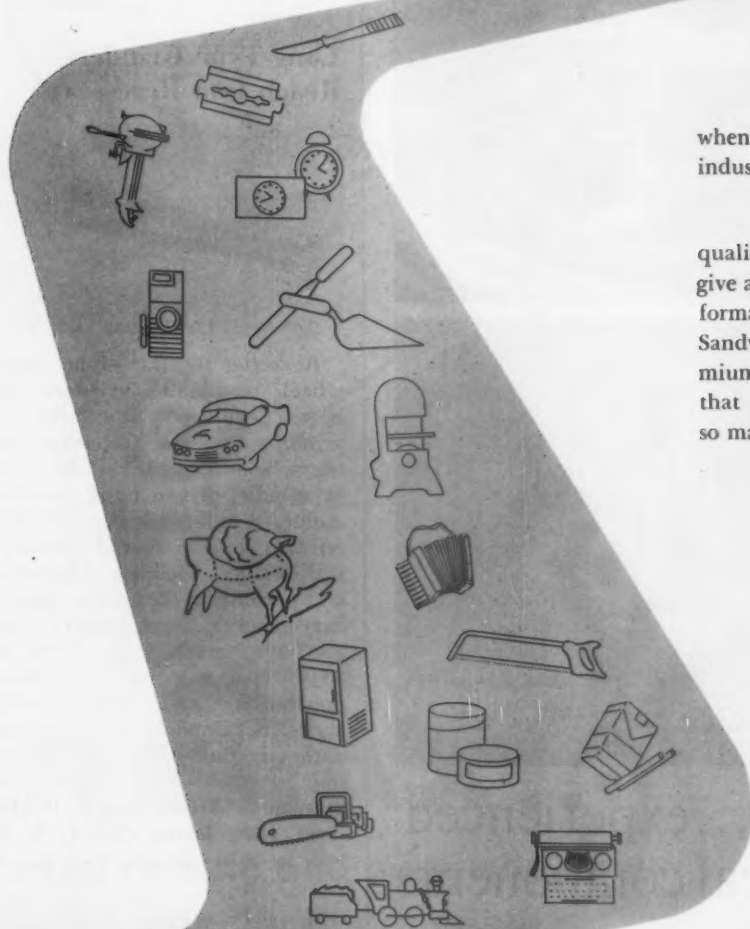
**CONNECTICUT  
HARD RUBBER**

Main Office: New Haven 9, Connecticut  
For More Facts Write No. 220  
on Information Card—Page 32

**PURCHASING**

# SANDVIK QUALITY

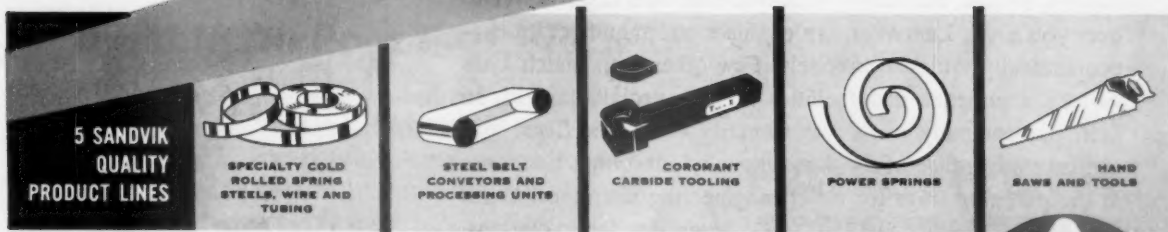
... An Ingredient of Successful  
American Products for Over 40 Years



As a matter of fact, *even before 1919* when Sandvik was incorporated, American industry used Sandvik products.

The reason, then and now, is Sandvik quality—the ability of Sandvik products to give a consistent, predictable, premium performance. It is by this performance that Sandvik has earned its reputation for premium products. It is by this performance that Sandvik contributes to the success of so many American products.

Throughout the U. S. and Canada you'll find Sandvik offices and warehouses conveniently located to put Sandvik quality at your service.



## SANDVIK STEEL, INC.

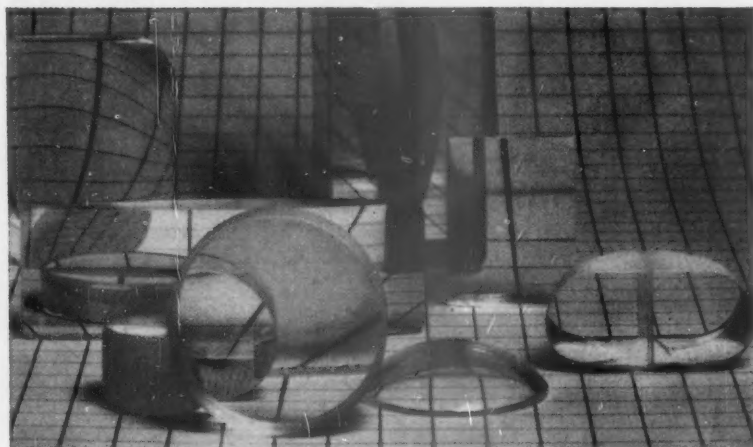
1702 Nevins Road, Fair Lawn, N. J. • Tel. SWarthmore 7-6200 • In N. Y. C. ALgonquin 5-2200  
Branch Offices: Cleveland • Detroit • Skokie, Ill. • Los Angeles  
SANDVIK CANADIAN LTD: P. O. Drawer 1335, Sta. O, Montreal 9, P. Q.  
Works: Sandviken, Sweden



58-230



A skilled Lancaster employee makes a close tolerance check on the optical blanks being ground on a Blanchard automatic grinder.



## Lancaster Glass...experienced producer of optical components

Lenses. Prisms. Reflectors. Miscellaneous optical parts. Whatever you need, Lancaster can engineer and manufacture it—economically, quickly, precisely. Few others can match Lancaster's experience and facilities in this specialized field. In fact, our company name was formerly Lancaster Lens. You can take advantage of this know-how by consulting Lancaster in the planning stage for expert engineering assistance. Or, if you have a product finalized, send blueprints for quotations.

 This mark means glass, engineered by Lancaster  
**Lancaster**

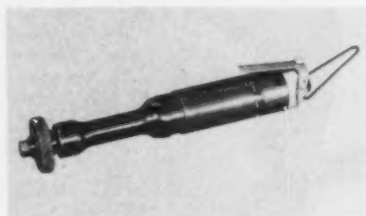
LANCASTER GLASS CORPORATION, LANCASTER 4, OHIO  
For More Facts Write No. 222 on Information Card—Page 32

## Products

(Continued from page 112)

any degree desired. Compact modular units require only standard electrical power supply. No interwiring is needed between stations. Loads can range from cartons or piece parts to tote boxes or pallets. **Electronic Controls Div., Flo-Tronic, Inc., 712 W. Ontario Ave., Minneapolis 3, Minn.**  
Write No. 29 on Information Card—Page 32

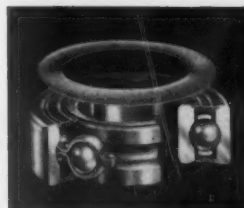
## Long-Type Grinders Reach into Recesses



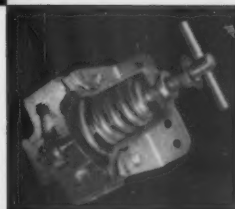
A series of long-type small wheel pneumatic grinders has been developed especially for grinding into deep recesses and for two-hand operation. The arbor or spindle, driven by a powerful motor, is independently mounted on two widely spaced bearings, maintaining accurate alignment and permitting continuous heavy-duty grinding. Twenty-seven models have speeds from 12,000 to 25,000 rpm, with choice of lever, pushbutton and ring throttle styles. Six models are furnished with governors for work requiring constant speed and power. **Thomas C. Wilson, Inc., 21-11 44th Ave., Long Island City 1, N. Y.**  
Write No. 30 on Information Card—Page 32



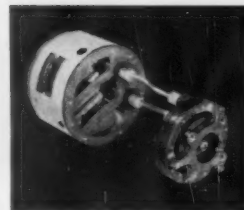
"I realize you're just trying to help us cut traffic cost, Miss Dooley; however, I'm afraid there just aren't any carriers who use little foreign sports trucks."



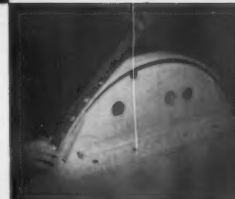
bearing seal



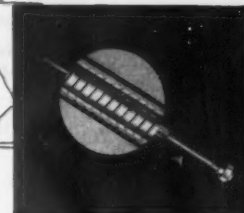
air-regulator diaphragm



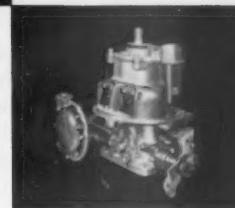
aircraft fuel-transfer control



sealing tape



molded jacket



carburetor diaphragm

# RELAX...

**you're safe and sure when you  
specify dependable,  
durable Du Pont FAIRPRENE**

You can always count on top performance and extra-long service from parts fabricated with Du Pont "Fairprene" uniform-quality coated fabrics. Reassuring? You bet it is. And this means long-term economy for your plant, too . . . less costly investment.

So whether you need gaskets, diaphragms, or condenser seals that must resist gas, oils, solvents, or temperature extremes . . . ask your supplier for Du Pont "Fairprene" and relax. Du Pont research and quality control assure you that your choice of this basic material was a good one!

\*"Fairprene" is Du Pont's registered trademark for its coated fabrics, sheet stocks, and cements.

**FAIRPRENE®**  
COATED FABRICS • SHEET STOCKS  
CEMENTS



REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING...THROUGH CHEMISTRY

# Office Equipment and Supplies



Conventional telephone receiver cradled in a new device will pick up and amplify incoming voices and transmit the outgoing voice clearly and distinctly. The "Phone Amplifier" is manufactured by Pierpoint Industries, Inc., 2 Franklin Avenue, Brooklyn, N. Y. It features a single volume control knob and operates on standard flashlight batteries.

Write No. 31 on Information Card—Page 32

New brochure in color describes card filing systems. It is entitled "Expanding Index" and was published by Yawman & Erbe Mfg. Co., Inc., Rochester, N. Y. Rules and charts for determining the size of indexing needed are included.

Write No. 34 on Information Card—Page 32



New 10-key electric adding machine is distributed by Alma Office Machine Corp., 349 Broadway, New York 13, N. Y. Features of the machine include automatic credit balance and direct multiplication from one motorized key.

Write No. 35 on Information Card—Page 32



New office copier using electrostatic principle has been introduced by Photorapid Corporation, 142 Oregon St., El Segundo, Calif. It produces dry, permanent, positive black and white copies. The original document to be copied, including bound volumes up to legal size, is placed on a "reading" glass, a button pressed, and in seconds the dry copy is ready.

Write No. 32 on Information Card—Page 32

Publication of two new catalogs has been announced by Polychrome Corporation, 2 Ashburton Ave., Yonkers, N. Y. One covers the company's line of offset supplies and the other lists mimeograph supplies. Both catalogs carry full product descriptions and illustrations in color.

Write No. 33 on Information Card—Page 32



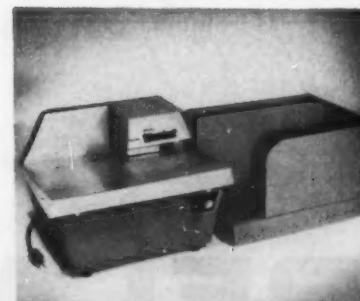
Free testing sample of a "stick" for cleaning typewriter type is available from Sperry-Sherwood Corporation, 257 Park Avenue South, New York 10, New York. Each stick has a wick at one end. Squeeze the stick and the wick is saturated with a special formula that wipes away the dirt.

Write No. 36 on Information Card—Page 32



An automatic aperture card copier, designed for large volume production of duplicate aperture cards, has been announced by Microfilm Products division of Minnesota Mining and Manufacturing Co. The new copier will permit multiple decks of aperture cards to be produced for initial distribution to any number of locations.

Write No. 37 on Information Card—Page 32



Fully automatic, electric letter opener was recently introduced by Redman Company, 6028 N. Cicero Avenue, Chicago, Ill. It was designed for small offices and departments which open moderate volumes of mail. It automatically feeds and opens all sizes of envelopes at the rate of 300 to 400 a minute.

Write No. 38 on Information Card—Page 32

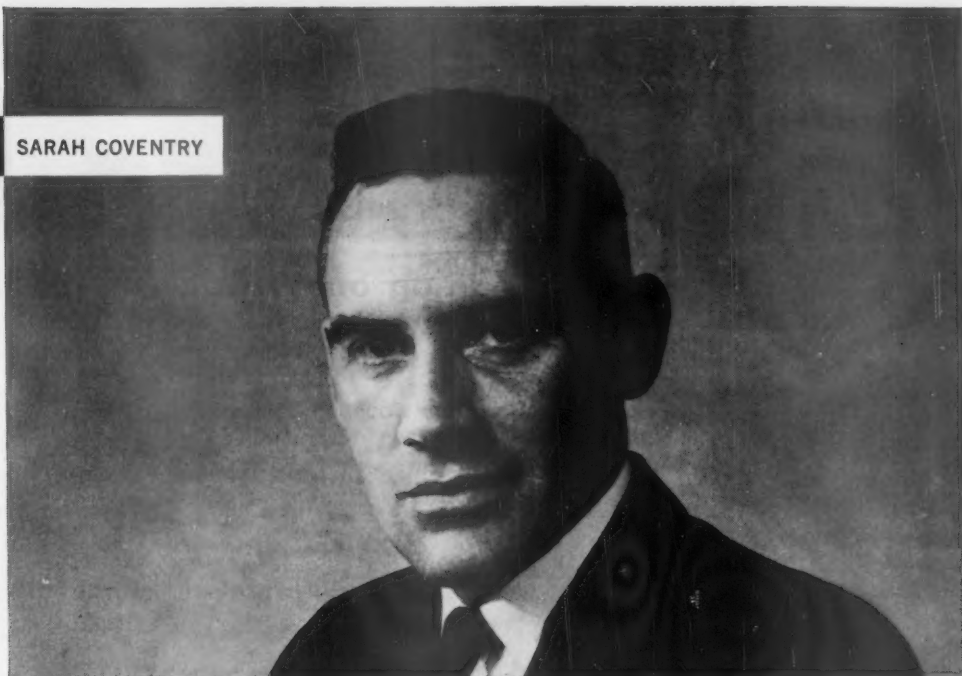
New literature which describes the 20 and 32-sheet tandem-type collators has been published by Thomas Collators Inc., 100 Church St., New York 7, New York. It describes equipment which will collate in a range of sheet sizes from 4" x 5" to 17" x 22".

Write No. 39 on Information Card—Page 32



CONTROL AT

SARAH COVENTRY



John T. Joyce, Executive Vice-President and General Manager of Sarah Coventry Inc.

## "Moore forms help us fill orders in 1 day instead of 4"

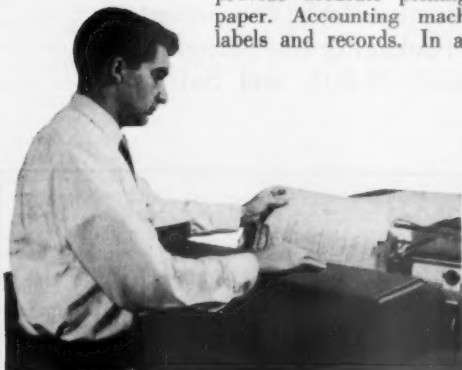
**THE SETTING:** Sarah Coventry Inc. sells almost 11 million pieces of fine fashion jewelry a year to 4 million customers, through a field force of 20,000 'modern living room salespeople.' A previous order/invoice system having 22 steps and 2 manual forms took 4 to 5 days to process and helped perpetuate operating weaknesses. Among them: shipping/pricing errors; stock delays hampering production; back-order 'double work' and, during peak 7000-order days, a staggering, uncontrollable task.

**THE SYSTEM:** One form has replaced 2 in an automated operation that fills orders in only 24 hours. It begins with detail and lead cards manually punched from input order data to provide accurate picking/shipping/invoicing paper. Accounting machines print shipping labels and records. In another operation, in-

voices are a direct instead of 22-step operation.

An automatic by-product is the punched statement card used to compute salespeople's commissions, now paid weekly; also taxes, merchandise sold and accounts receivable. In other gains, shipments are accurate; volume variation is handled smoothly; a 'daily aggregate' furnishes stock and production control. The 3-part custom Speediflo, a Moore form, is the company's control in print.

**THE COUNSELOR:** "The Moore man contributed to this improvement with an understanding of business procedures, practical knowledge of forms construction plus a good cost-cutting instinct," said John T. Joyce, Sarah Coventry Executive Vice-President. If your system isn't performing the way you feel it should, write the nearest Moore office—without obligation.



**MOORE BUSINESS FORMS, INC.**  
Niagara Falls, N. Y. • Park Ridge,  
Ill. • Denton, Texas • Emeryville,  
California • Over 300 offices and  
factories throughout the U. S.,  
Canada, Mexico, Caribbean and  
Central America.



Build control with

# MOORE BUSINESS FORMS

MARCH 27, 1961

For More Facts Write No. 224 on Information Card—Page 32

117

Coming May 8, 1961 . . .

Again this year **PURCHASING Magazine** will bring you  
a complete edition on **VALUE ANALYSIS**

This valuable cost reduction issue will show you

**HOW** Value Analysis is applied in any purchasing department—regardless of size.

**HOW** Value Analysis becomes an integral part of the materials management program.

**HOW** Value Analysis promotes teamwork between purchasing, engineering and suppliers.

**HOW** Value Analysis training can be made to yield spectacular results.

**HOW** to determine if there is a need for a full-time analyst.

**HOW** a Value Analysis program can be organized to get best results.

In addition . . . this issue will include over

300 actual case histories of Audited Savings classified for easy reference into 9 product categories: Production Tools, Component Parts, Materials, Electrical Equipment, Packaging and Shipping, Materials Handling, Power Transmission, M.R.O. and Safety Supplies and Office Supplies.

Mail this coupon to:  
Paul V. Farrell  
PURCHASING Magazine  
205 East 42nd Street  
New York 17, N.Y.  
Please reserve for me . . . . . additional copies of your May 8,  
1961 APPLIED VALUE ANALYSIS edition at the special pre-publica-  
tion price of \$1.00 per copy. (Regular price of this edition is  
\$1.50 per copy).  
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of AAA Accounting  
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**MODERN INTERIOR**  
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counting and Tax Service.



**IN LESS THAN 1 YEAR**, this National  
System returned our investment!

"Our *National* System with Tape Recorder  
saves us \$3,600 a year...  
returns 106% annually on investment!"

—AAA Accounting and Tax Service, Chicago, Ill.

"This Data Processing System is extremely flexible. It can be used for many accounting functions: Accounts Receivable, Accounts Payable, Payroll, and Inventory.

"In the past we had a manual method which was slow, and time-consuming because considerable duplication of work was required. Now, with the National Punched Paper Tape (and the services of a Data Processing Office) we provide our clients with accurate financial statements for the month and year-to-date, in a minimum of time, and at a substantial reduction in cost. We are now able to give our clients more information, without delay—in time for them to take any action necessary for profitable operation.

"Our National system assures ac-

curacy because of many automatic features which eliminate operator decisions and errors. For example, data is automatically punched in paper tape as the operator posts on the bookkeeping machine. All postings are proved at the source, before punched tapes are mailed for processing.

"In summarizing, here are the major advantages of our National System: No long, complicated operator training period; saves time; reduces overtime to an absolute minimum; faster service; more accurate and up-to-date information; substantial savings."

*J. J. Ardizzone*

AAA Accounting and Tax Service

Your business, too, can benefit from the many time- and money-saving features of a National Data Processing System. Nationals pay for themselves quickly through savings, then continue to return a regular yearly profit. National's world-wide service organization will protect this profit. Ask us about the National Maintenance Plan. (See the yellow pages in your phone book.)



TRADE MARK REG. U. S. PAT. OFF.

**National\***

ACCOUNTING MACHINES

ADDING MACHINES • CASH REGISTERS

ELECTRONIC DATA PROCESSING

NCR PAPER (NO CARBON REQUIRED)

**THE NATIONAL CASH REGISTER COMPANY, Dayton 9, Ohio**

1039 OFFICES IN 121 COUNTRIES • 77 YEARS OF HELPING BUSINESS SAVE MONEY



# New York Purchasing-Sales Dinner Fills Waldorf Ballroom



Members and guests filled the grand ballroom of the Waldorf-Astoria Hotel. Shown here are (l. to r.): Alan G. Pogul, Abarry Steel Co.; J. L. Babik, United States Metals Refining Co.; Richard K. Hurley, J. E. Hurley Lumber Co.; and Philip Foxe, United States Metals Refining Co.



Gailon Fordyce (right), American Cyanamid Co., president of the New York Purchasing Agents Association, chats with Frank Winters, assistant secretary-treasurer of the National Association of Purchasing Agents before the meeting.



Smiles abound as the national N.A.P.A. president, Paisley Boney of J. P. Stevens & Co., and Anne Repko, Howe Sound Co., register approval at the success of the purchasing-sales dinner.

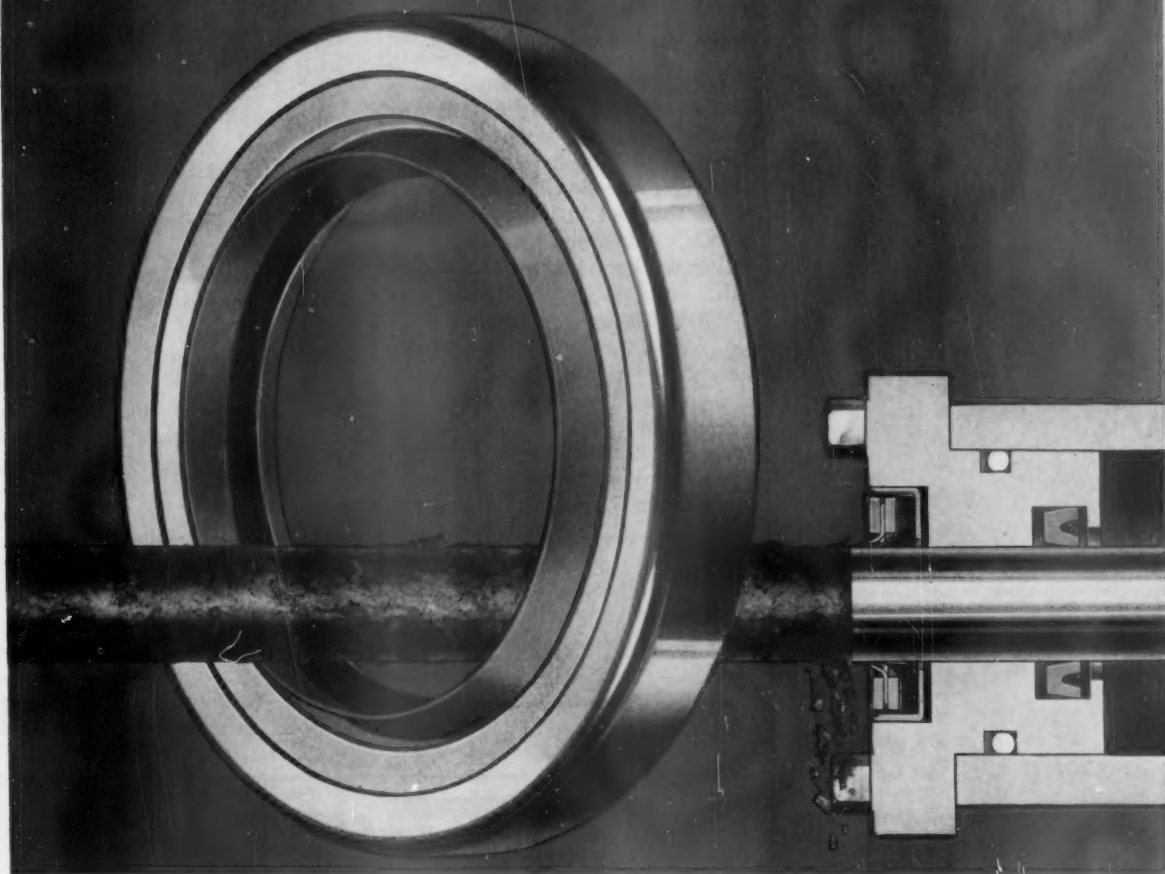


Old-timers in the purchasing profession swapped stories at the predinner social hour: (l. to r.) James Leonard, former executive secretary of the New York Association; George Renard, former secretary-treasurer of the National Association of Purchasing Agents; and H. W. Christensen, former president of the N.A.P.A.



Robert H. Davis (right), executive secretary of the New York Association, and the guest speaker, Tom Collins, City National Bank and Trust Co. of Kansas City, compare notes before heading for the dais.

ANOTHER NEW PRODUCT DEVELOPMENT FROM C/R



## New Wiper-Scraper Seal for Cylinders

*Scrapes off ice, mud, tar – wipes off water, dust, other contaminants*

Now, you can effectively exclude dirt and other contaminants from hydraulic cylinders under the most severe field conditions. One compact unit, the C/R SC Wiper-Scraper Seal does the job. Formerly, a separate rod scraper had to be installed in front of the ordinary wiper seal. The special machining necessary, plus the scraper ring, and retaining ring made this an expensive installation.

Chicago Rawhide's SC Wiper-Scraper Seal combines a spring brass scraper and synthetic rubber wiping member in one steel shell. The I.D. of the scraper is slightly under shaft size to provide a snug fit that will remove tar or frozen mud, but it has sufficient play within the shell to tolerate any off-center conditions of the rod such as caused by bearing "bore-slop." The cost is much lower than any other

combination of scraper and wiper. "Design-in" cost is low, assembly simple. Most important is the performance contribution to the cylinder. The additional value of longer packing life and increased operating dependability with the SC Wiper-Scraper Seal will far outweigh the nominal cost.

For complete information, specifications and standard sizes, write for your copy of C/R's new Bulletin SC-100

### CHICAGO RAWHIDE MANUFACTURING COMPANY

OIL SEAL DIVISION: 1239 ELSTON AVENUE • CHICAGO 22, ILLINOIS

Offices in 55 principal cities. See your telephone book.

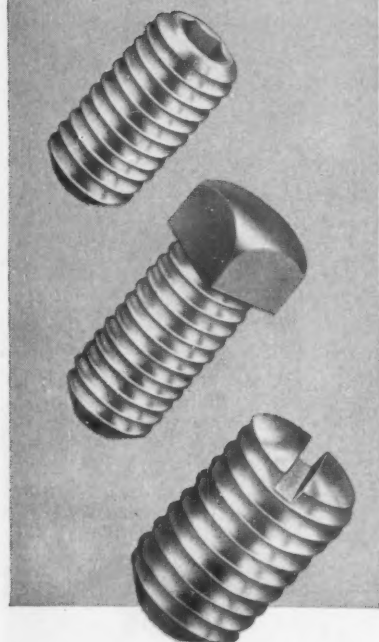
In Canada: Chicago Rawhide Mfg. Co. of Canada, Ltd., Brantford, Ontario

Export Sales: Geon International Corp., Great Neck, New York

C/R Products: C/R Shaft & End Face Seals • Sirvene (synthetic rubber) molded pliable parts  
Sirvis-Conpor mechanical leather cups, packings, boots • C/R Non-metallic Gears.



# PDQ\*



## specify **MOORE** **SET SCREWS** *and be sure*

\*PDQ means price, delivery, quality. And you get all three with Moore Set Screws. The PRICE is right. Ample production capacity and inventories assure fast DELIVERY. And rigid control standards guarantee there's no skimping on QUALITY.

Moore offers you a complete line of set screws to meet your requirements . . . one or a million; standards, miniatures or specials; in a wide selection of materials, finishes, lengths and points. The next time you need set screws, specify Moore and *be sure*. Dependable quality for over 80 years.



**George W. Moore, Inc.**  
since 1880  
96 Beaver Street, Waltham 54, Mass.

For More Facts Write No. 227  
on Information Card—Page 32

## Association News

### New Image Urged For Purchasing Agents

Officials of the National Association of Purchasing Agents are taking vigorous steps to bring forth a "new image" of the purchasing profession. This image is being fostered in the eyes of the public, educators, management, fellow workers, and purchasing itself.

An ambitious program of education and educational opportunities "will most assuredly create a new and improved image for purchasing," stated Galen E. Andrews, Barnes Drill Co., vice chairman of the national committee for professional development.

Andrews discussed the proposed program to improve the stature of the purchasing man and the N.A.P.A. in an article released by the national public relations committee.

"An increase in annual dues is merely the first step," the vice chairman said. "What is done with

the additional income and the types of programs supported will determine the success purchasing will attain."

The major portion of his article dealt with the topic "A Better Future Through Research Grants and Subsidies For Writers." He said that there are only three textbooks which can be recommended to colleges and universities: "Purchasing" by Stuart F. Heinritz; "Procurement—Principles and Cases" by Howard T. Lewis; and "Industrial Purchasing" by Westing and Fine.

"The committee for professional development recommends that a fund of not less than \$50,000 be established and maintained for the purpose of giving research grants and subsidies," Andrews said. "This figure was set as a minimum after numerous conferences with educators from some of the leading colleges and universities.

"There is a drastic need for more written material on purchasing and its affiliated fields of operation. The best and most direct approach is to contact individuals

(Please turn to page 124)

## JUSTRITE SAFETY CANS



### better because they're stronger!

Only Justrite Safety Cans . . . the standard of industry . . . have all these "strong" points that increase service and satisfaction: Malleable iron spout—a Justrite exclusive . . . double seams folded and locked—(see illustration above) . . . bodies ribbed for extra strength—on side, on top, on bottom . . . full 15-pound lead coating on 24 gauge sheet steel. Even if a

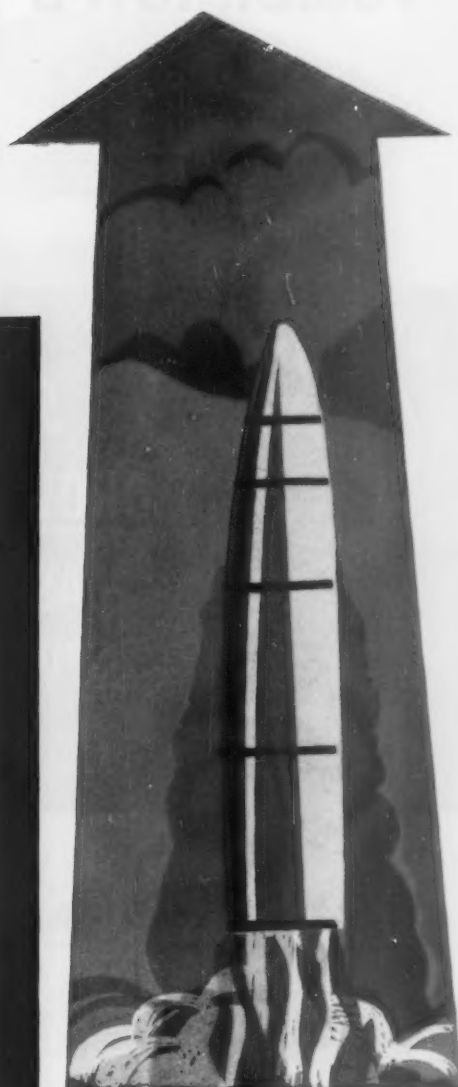
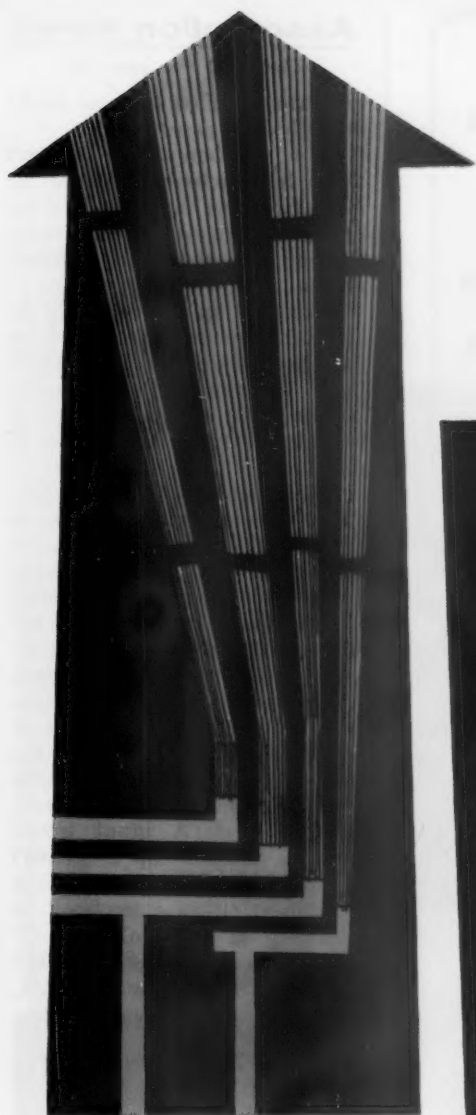
Justrite Safety Can is completely enveloped in flames, the seams remain tight until fire evaporates the contents. And, the Justrite 3-way operating handle which pulls back for pouring is a real "back-saver." Write today for name of nearest distributor and illustrated descriptive catalog. Justrite . . . the world's standard of safety since 1908.

**JUSTRITE**  
MANUFACTURING COMPANY

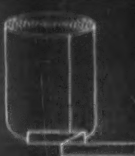
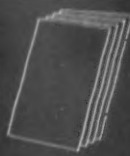
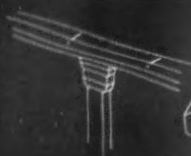
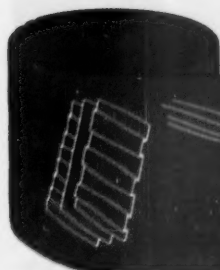
2061 N. Southport Ave.  
Chicago 14, Illinois

For More Facts Write No. 228 on Information Card—Page 32





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BUS BAR  
TO  
BALLISTIC  
MISSILES  
HUSSEY  
COPPER  
DOES THE JOB  
BEST!



**WAREHOUSES** Cleveland • Cincinnati  
Chicago • New York (Long Island City)  
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**C. G. HUSSEY & COMPANY ■ PITTSBURGH 19, PA.**

**DIVISION OF  
COPPER RANGE COMPANY**



# TOMORROW'S GEARS TODAY!



## Sier-Bath CROWN-GROUND CASE-HARDENED SPUR and HELICAL GEARS

### OTHER ADVANTAGES

- Compensate for unbalanced rotation
- Eliminate causes of "end bearing"
- Produce more uniform accuracies
- Permit greater variety of tooth forms
- Carry greater loads at higher speeds
- Operate with extreme quietness
- Increase machine production and life

**Sier-Bath  
PRECISION  
GEARS**

Also manufacturers of Rotary  
Pumps and Flexible Gear Couplings



Eliminate the  
damaging effects  
of  
— misalignment  
— shaft deflection  
— tooth distortion

Your machines need no longer be limited by the inability of gears to withstand the punishing demands of deflections—greater loads—and continuous high speed operation.

Sier-Bath Crown-ground case-hardened gears upgrade the values of existing gear formulae, giving you new design latitude and your machines new production capabilities never before obtainable.

### COST NO MORE

IF YOU ARE USING GROUND TOOTH GEARS, these Sier-Bath Crown-ground gears cost the same as and often less than, commercially-made ground tooth gears.

Send details or prints of your application. Or, write for a Sier-Bath gear engineer to explain the vast improvements possible in your machines, by using Crown-ground case-hardened gears instead of ordinary gears.

**Sier-Bath GEAR & PUMP CO., Inc.**

9256 Hudson Blvd., North Bergen, N. J.

Founded 1905

Members A.S.M.A.

## Association News

(Continued from page 122)

who are qualified to write books and scholarly papers.

"The problem is to interest them in purchasing. Money or financial aid is about the best incentive. It can be made available through subsidies and research grants.

"Financial assistance would be given in amounts up to \$1500 for a masters degree and up to \$5000 for a doctorate, with the understanding that the student would write his thesis on some phase of purchasing.

"The number of times that financial assistance could be given in one year would depend on the number of qualified applications, the amount of money available, and the decision of the board appointed to govern such activities."

The committee for professional development strongly recommended that certain portions of the yearly fund be used in the form of research grants for writers, administered at the post-doctoral level. A grant would range in amounts up to \$10,000 and would include a time limit to produce either a textbook or valuable reference book.

Andrews outlined some of the requirements for a grant. He said,



Galen E. Andrews

"It should be understood that the recipient would be expected to take a period of time away from his routine duties. He would devote the time and energy normally spent earning a livelihood (Please turn to page 126)

For More Facts About Ad  
on Facing Page Write in No. 231→



## stainless steel

No other metal has the strength, beauty and versatile qualities that serve you so well today and promise so much for tomorrow.

**There is nothing like  
stainless steel for HOMES  
AND HOME PRODUCTS**

McLouth Steel Corporation,  
Detroit 17, Michigan

*Manufacturers of high quality  
Stainless and Carbon Steels*

Look for the **STEELMARK**  
on the products you buy.



**McLOUTH STAINLESS STEEL**



## These Columbia-Southern Chemicals are used in the textile industry

chlorine • caustic soda • soda ash • hydrogen peroxide  
sodium bichromate • potassium bichromate • sodium sulfate  
sodium sulfide • sodium bicarbonate • ammonia • muriatic acid  
calcium hypochlorite • perchlorethylene • trichlorethylene

## These PPG developments advance textile technology

PPG's Chemical Division recently developed a continuous hydrogen peroxide cotton bleaching technique that reduces bleaching time by as much as 70%.

Another new process for bleaching cotton knit goods racks up impressive savings in time and materials.

PPG's Chemical Division maintains a modern, fully equipped textiles applications laboratory and a knowledgeable technical staff to help users make the best use of Columbia-Southern Chemicals.

Textile processors like doing business with Columbia-Southern. So will you.



columbia | southern  
chemicals

CHEMICAL DIVISION

PITTSBURGH PLATE GLASS COMPANY

ONE GATEWAY CENTER PITTSBURGH 22, PENNSYLVANIA

DISTRICT OFFICES: Boston • Charlotte • Chicago • Cincinnati • Cleveland

Dallas • Houston • Minneapolis • New Orleans • New York • Philadelphia

Pittsburgh • San Francisco • St. Louis • IN CANADA: Standard Chemical Limited



For More Facts Write No. 232 on Information Card—Page 32

## Association News

(Continued from page 124)

Andrews forsee many gains for the purchasing profession through a system of financial aid in the form of research grants and subsidies, including: adding valuable information with more papers and books available, increasing the number of instructors of purchasing courses who are also trained teachers, and making it much easier to arrange for accredited purchasing courses.

He said that with more undergraduate purchasing courses listed in college bulletins, students majoring in other fields "will be cognizant of purchasing's contribution and importance. A new image—a true image—will be created."

Vice Chairman Andrews concluded by stating "In many instances, purchasing has been referred to as its own worst enemy. It has been afraid to invest in its own future for fear of not spending a dollar wisely. If purchasing will not invest in itself in the present, it can expect little for its future."

### Florida P.A. Selected By Chamber of Commerce

Gaston L. Dickens, purchasing agent for the Glidden Company and a member of the Florida Association of Purchasing Agents, was recently selected as one of the instructors for a special course sponsored by the Jacksonville Chamber of Commerce.

The 13-week course is given in two-hour sessions every week at the Jacksonville University. It covers "Basic Fundamentals of Supervision."

### Value Analysis Is Topic In Eastern New York

The purchasing Agents Association of Eastern New York recently devoted its meeting to discussion of value analysis-standardization.

Magne H. Amundsen, Sager-Spuck Supply Co., arranged a

(Please turn to page 130)

LONG AND STRONG...



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Build recognized quality into your products with continuous hinges by National Lock. Neat, attractive and strong! Load is distributed evenly for greater bearing capacity, lasting ease of operation. Choose from a wide variety . . . equal or unequal wings, with springs or without, parallel or staggered holes, swaging to suit your needs. In steel, brass, stainless or aluminum. Precision-built by National Lock. Write for catalog today.

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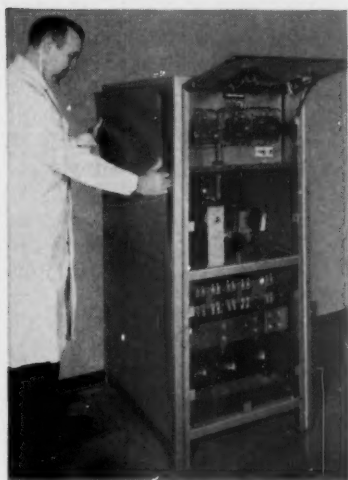
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### 1 NEW TRANSFORMER DESIGN

Featuring proven *Balanced Power* design, Ultrasil Transformers eliminate diode matching and balancing reactors. Top quality silicon transformer steel, improved varnish coating, silver soldered electrical connections with the elimination of mechanical connections are but a few of the many new features. Transformers are conservatively rated, have Class B insulation and are designed for optimum ventilation.

### 2 NEW DIODE ASSEMBLY DESIGN

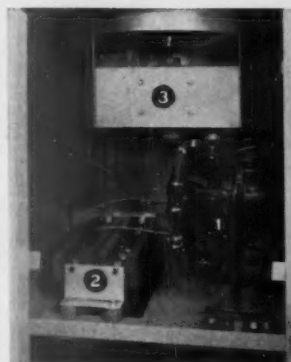
New, one-piece, solid copper finned heat sink assembly provides peak cooling efficiency, requires less room, is easily accessible. Improved Silicon Diodes have new ceramic insulation. Soldered seals have been eliminated. Flexible connectors feature increased capacity.

### 3 NEW VENTILATION SYSTEM

The new fan housing assembly of the Ultrasil coupled with new permanent, built-in baffling assures highest ventilation efficiency.

### NEW PROTECTIVE DEVICES

New thermostatic trips give positive protection against diode overheating from any cause. D.C. protective device guards against excessive overload and short circuit conditions. Each diode is protected by a readily accessible fuse.



Ultrasil Rectifiers are available in capacities from 500 to 8,000 amperes, and from 6 to 24 volts; additional capacities, on request. Integral, remote and automatic controls are available. Call your Udylite representative. Or, write:

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DELTA FILE WORKS, INC., PHILADELPHIA 37, PA.

**PLUMB**

For More Facts Write No. 235 on Information Card—Page 32

## Association News

(Continued from page 126)

panel presentation for the membership. Phil Spinellia, General Electric Co., was the panel moderator. Members of the panel were: William H. Flint, Cluett Peabody & Co.; Howard W. Hull, General Electric Co.; and B. J. Murphy, Sager-Spuck Supply.

Also on hand was Edwin C. Drew, Allied Chemical Corp. and 8th District Vasco chairman of the National Association of Purchasing Agents.

### Electronic Industry P.A.'s Elect Officers for 1961

Purchasing agents from radio, television and electronic industries recently elected A. Weingast, Precision Apparatus Co., as president of their group, "The P.A.'s Inc."

Other officers elected to serve with Mr. Weingast are: Milton Brody, Mohawk Business Machines Corp., vice president; Louis Lucci, Republic Electronics Industries, recording secretary; B. J. Trimboli, Telechrome Mfg. Co., corresponding secretary; and A. Schnlederman, Olympic Radio & Television, treasurer.

### New England P.A.'s Visit Electronic Plant



Members of the Electronic Industries Group of the New England Purchasing Agents Association listen closely to Arthur E. Thiessen, chairman of the board at General Radio Co., Concord, Mass. The talk was followed by a tour of the General Radio plant.

PURCHASING

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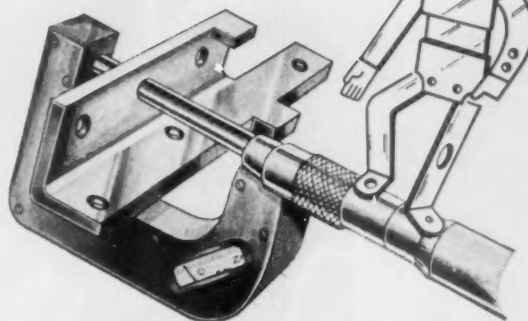
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and other quality floor finishes, write:



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## How to save money and make a better product

The batch method of processing is old fashioned, slow and often unduly expensive. By automating your operation with a woven wire conveyor, you can increase production . . . reduce costs . . . and turn out products of consistently uniform quality.

CF&I designs and manufactures Wissco Woven Wire Belts for virtually every process-conveying operation. The metal fabric resists heat, corrosion and abrasion, while the open mesh permits free, unvaried circulation of air, liquids or gases around all sides of the product.

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A primary function of open flooring is to admit light and air to areas above and below its surface . . . to provide safer, more comfortable working conditions. Blaw-Knox Electroforged Steel Grating is designed to provide maximum open area.

Load requirements establish equal bearing bar dimensions for all types of grating, in equal service. Because it is Electroforged, Blaw-Knox grating can get maximum strength from crossbars only  $\frac{1}{4}$  inch square. This means less obstruction to light and air, and safer, more comfortable working conditions above and below.

Visibility is only one way Electroforged grating increases safety. Sure footing is provided by the non-slip, twisted crossbar and a choice of either square, or serrated bearing bars. Electroforged grating is self cleaning, too. There are no joints or crevices to collect dirt and grease.

Electroforged grating also is available in other materials such as Monel, Cor-ten and aluminum. Write for Bulletin 2581 for further information. Blaw-Knox Company, Pittsburgh 38, Pa.



Blaw-Knox Equipment Division

**BLAW-KNOX**  
GRATING

For More Facts Write No. 239 on Information Card—Page 32

## News

### Freight Car Deliveries Decline in January

Deliveries of new freight cars to the nation's railroads and private car lines totaled 3515 units in January. This compares with 4272 cars in December and 2849 units in January 1960, says the Association of American Railroads and the American Railway Car Institute.

New orders for freight cars in January amounted to 1339 units. In December, 2705 cars were ordered, while a total of 5742 freight cars were ordered in January 1960.

The backlog of cars on order and undelivered on February 1 was 13,871 units in railroad shops and 5203 units in the shops of contract car builders. This total of 18,894 cars on order and undelivered is 2176 cars less than the 21,070 cars in this category on January 1 and 29,276 cars less than the 48,170 cars on order on February 1, 1960.

A breakdown of the type of cars on order as of February 1 includes: 4947 hopper cars, 4734 plain box cars, 4140 gondola cars, 2003 refrigerator cars, 989 covered hopper cars, 876 tank cars, and 130 miscellaneous types.

The Association of American Railroads also announced that Class I railroads installed 453 new locomotive units in service last year. This compares with 842 installed in the previous year.

Of the number installed in 1960, 440 were diesel-electric, 12 were gas turbine-electric, and 1 was electric.

### Machine Tool Trade-In Plan Is Established

Firing a salvo in its "war on obsolescence", Pratt & Whitney, Hartford manufacturer of machine tools, cutting tools, and gages, has set up a new corporate unit to buy, sell, and trade used machine tools.

The new company, Machinery Trading Corporation, will be headed by Frank Reilly, former

(Please turn to page 134)

## GAYLORD follows up with complete packaging service

Behind every Gaylord man and every Gaylord box is a fully integrated, nationwide organization staffed and equipped to track down hidden packaging costs before they waylay you.

Don't let design, production or delivery haunt you. Call your Gaylord Man. He's almost as close as your shadow.



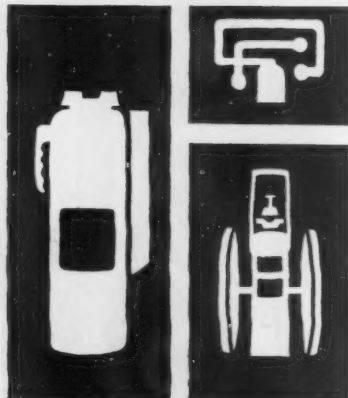
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may turn out to  
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best decisions



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ANSUL CHEMICAL COMPANY  
1 STANTON ST., MARINETTE, WISCONSIN

For More Facts Write No. 241  
on Information Card—Page 32

## News

(Continued from page 132)

vice president of a New England used machinery firm.

Pratt & Whitney believes that a major barrier to the sale of new equipment is the disposal of equipment presently being used. By offering purchasing agents a market for their old equipment—regardless of the make or model—it believes they will be encouraged to enjoy the advantages of more modern machinery. Pratt & Whitney says that it should be able to offer "as much or more" than used machinery dealers can offer on a trade-in.

Here is how the new system will work: A customer who desires to purchase a new Pratt & Whitney machine and also has equipment to trade will contact a company representative. Pratt & Whitney will then contact Machinery Trading Company to have it examine the equipment to be traded and make the customer an offer.

If the offer is acceptable, arrangements will be made for MTC to acquire the machine and the customer will be given credit on the purchase of a new Pratt & Whitney machine. After the old machine is reconditioned, MTC will offer it for resale, often to used machinery dealers.

There will be many cases where MTC will be involved in a transaction and Pratt & Whitney will not. Although it will specialize in Pratt & Whitney equipment, Machinery Trading Company will also buy and sell used equipment of other manufacturers.

In this manner, a customer who is not quite ready for a new machine will still be able to take advantage of MTC's facilities by trading older used equipment for the purchase of later-model used equipment.

Features of the plan include convenience in dealing with one organization and certain tax advantages by disposing old equipment and buying new machines in the same transaction.

Present plans call for MTC to operate out of West Hartford, Connecticut, with warehouses to be established as needed throughout the country.

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# INDUSTRIAL PURCHASING

Buying for Industry and  
Budgetary Institutions

SECOND EDITION

By J. H. WESTING, Associate Dean, School of Commerce, University of Wisconsin, and I. V. FINE, Professor of Commerce, Univ. of Wisconsin.

Since the first edition of *Industrial Purchasing* was brought out in 1955, the purchasing function has undergone many important changes. This new edition is the source that explains them all. Over-all, however, the aim remains the same: to stress and outline the making of policies rather than the bread-and-butter procedures of purchasing.

### Expanded . . .

Much more has been added on the materials concept of organization, plus value analysis, quality and quantity controls, anti-trust activity and its relation to administered pricing, and scrap disposal.

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Included now are 35 cases, distributed at the end of several chapters. Although they are short case histories, they deal with specific purchasing problems, and are intended to point up the problems encountered in the chapters they follow.

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For the new man in purchasing and the student, chapters on commodities are included, to give these readers some knowledge of the kinds of goods that are purchased. Attention is also given to purchasing by government agencies and related institutions.

1961 534 pages \$9.50

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For More Facts About Ad  
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Electric Hose & Rubber Co., Wilmington, Delaware, world's largest hose manufacturer, reinforces their Delmar gasoline pump hose with Keystone Drawn Galvanized MB Spring Wire to prevent kinking and collapse and to resist corrosion. This high quality wire and rayon cord are circularly woven around an inner hose lining . . . automatic horizontal woven hose machines do the job. The outside cover is extruded over the carcass and the final product vulcanized.

Keystone Drawn Galvanized MB Wire with its close diameter tolerance, uniform temper throughout the coil and special zinc coating has been developed to work perfectly in the highly automated machines of Electric Hose & Rubber Co. Regular galvanized wire just won't work.

Just as Keystone Wire Specialists successfully produced this high carbon quality wire that has proved so satisfactory for Electric Hose & Rubber Co., they would like the challenge of developing a wire to improve upon your present wire product. See your Keystone Representative soon; he will be pleased to discuss your wire problems.

*Keystone Steel & Wire Company, Peoria, Illinois*



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For More Facts Write No. 244  
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## Book Reviews

### **Successful Managerial Control by Ratio-Analysis**

By Spencer A. Tucker  
 McGraw-Hill

\$11.00

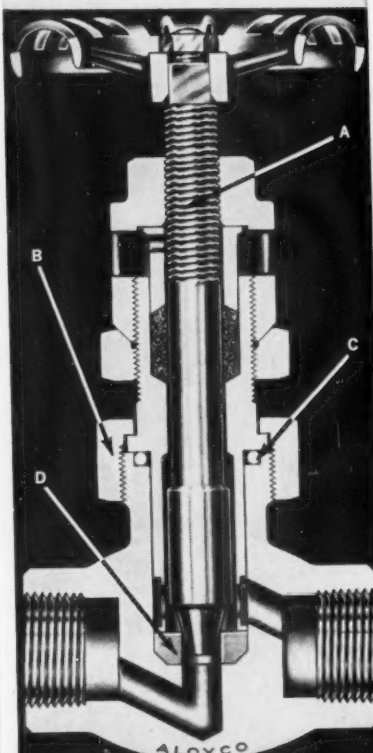
Almost every purchasing agent tries to measure and interpret basic operating data in his department. He then reports his findings periodically to top management. This new book describes how to apply concepts of ratio analysis to a variety of situations. The principles of ratio-analysis can be adapted by the imaginative purchasing executive to performance measurement and reports to management of his own department.

The purchasing executive is faced with a myriad of statistics on operations in his department—output of work, operating expenses, quality statistics, delivery statistics, cost of materials purchased, etc. This book shows how to construct both simple and advanced ratios—derived from hitherto unrelated data and available normally in company records—to give meaning and value to the wealth of facts and figures distilled from all business operations. Information and data are drawn from the three major segments of industrial activity—production, sales, and finance. Over 400 specific ratios are included, and the book shows how to use the most important of these and how to develop others for use in particular circumstances. MC interrelates movements of the ratios from the three business areas to form the basis for managerial control, diagnosis, and decision. Scores of charts typify and evaluate practical situations, conditions, and case histories of many companies in several different industries, to help demonstrate MC's effectiveness as a management technique.

**Coming — May 8, 1961**  
**Purchasing Magazine's**  
**Annual**  
**Value Analysis Issue**

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### Aloyco Needle Valve eliminates leakage and galling!



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\*Alloys available: 18-8S, 18-8SMo, Aloyco 20

This #62 Stainless Steel needle valve has proved itself for 10 years in many types of severe corrosive service. It is particularly suitable for sensitive control of flow as in metering, or sampling for process plant, laboratory or pilot plant use. For more facts write: Alloy Steel Products Company, 1312 West Elizabeth Ave., Linden, New Jersey.

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**ALLOY STEEL PRODUCTS COMPANY**

For More Facts Write No. 245  
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PURCHASING

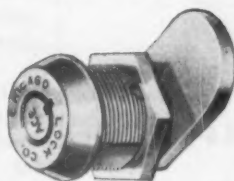


## THE KEY TO YOUR SECURITY DESIGN PROBLEM

If the equipment or product you are designing should have a lock, it should have the unique Chicago ACE® Lock. The above key fits the circular keyway of an ACE lock and is as symbolic of maximum security as it is different from conventional keys.

Because of the intricate tumbler combinations possible in a Chicago ACE Lock, you can specify your own registered, unduplicated key cut with duplicate keys available from the factory only.

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For More Facts Write No. 246 on Information Card—Page 32

MARCH 27, 1961

## plastic mold and core duplications save time and labor

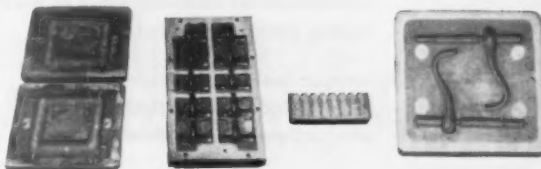


Performance-proven in numerous foundry pattern applications, REN epoxy resins provide an economical answer to rising labor-material costs. The extreme workability of these dimensionally stable materials completely eliminates many costly standard duplication methods.

REN epoxy resin patterns are highly resistant to impact, chemicals and abrasion. They facilitate quick and easy release from sand—without the aid of lubricants. Exacting duplications—surfaces are smooth and free of voids and pits. Applications prove the production life of REN materials practically equals that of iron and aluminum.

At no obligation, send today for your subscription to REN'S bi-monthly publication, Tech-Ni-Tips/Digest.

### 4 PLASTIC PATTERN APPLICATIONS



A few of more than twenty patterns, duplicated from plaster casts by Wolverine Brass Works, Grand Rapids, Michigan, using REN plastic compounds. Comparison analysis proved Wolverine saved up to 66% in construction time—and up to 80% in labor using REN epoxy resins for these patterns.

OFFICES AND WAREHOUSES IN PRINCIPAL CITIES.

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137



**Check these  
typical  
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savings**

**enjoyed by  
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LEADED STEELS**

- Production economy without any sacrifice in quality
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All of these production advantages result in substantial savings in time and money when you specify and use Wyckoff Cold Finished Leaded Steels—the freest machining of all steels.



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**Purchasing People**

(Continued from page 52)

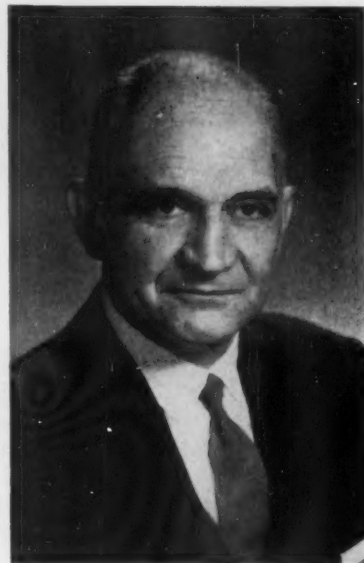
Reynolds Metals Company has made the following purchasing announcements:

Billy M. Mason has been promoted to purchasing agent for the company's Sherwin Alumina Plant, Corpus Christi, Texas.

Roy F. Ash, Jr., has been named director of purchasing for Eskimo Pie Corporation, Richmond, Va., a Reynolds subsidiary.

W. B. Taylor, Jr., will continue as purchasing agent for Reynolds' San Patricio Reduction plant, Corpus Christi.

James Mfg. Co., Fort Atkinson, Wisc. has named Warren Parker manager of purchasing. Mr. Parker replaces Forrest C. Touton,



Warren Parker

who has been named director of the company's value analysis program. Richard G. Bannasch was named assistant manager of purchasing.

Irving Maness has been named Deputy Administrator of the Small Business Administration for Procurement and Technical Assistance. Mr. Maness, a career government attorney, was a former counsel to the House Select Committee on Small Business. In his new position, Mr. Maness will

(Please turn to page 140)

For More Facts About Ad on Facing Page Write in No. 249→



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A lot of suppliers *talk* about delivery and service. Here's just one example of what we *do*.

When a P.A. reported to our Seattle representative that his firm\* had an equipment failure, it was five o'clock on a Friday afternoon. 500 feet of 5-KV cable were needed—fast!

It was eight o'clock in the East, of course, but our Seattle rep called the home office anyway. He talked to the Sales Service Manager, who tracked down the Traffic Manager at his Friday-night bowling game. They both went to work, and by 11:00 that night the order was assembled from Rome's stock. It was shipped by plane and by 7:30 Monday morning was in Seattle and on the job.

Unusual? Maybe. But it's typical of what you can expect in the way of service when you meet your wire and cable requirements through any of Rome's 500 distributors.

\*Name furnished on request

For information about our broad line of products, write for Bulletin RCP-200, "Guide to Representative Wire, Cable and Conduit." Address inquiries to Rome Cable Division of Alcoa, Dept. 14-31, Rome, New York.



Rome Cable Division supplies  
ALUMINUM WIRE AND CABLE  
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reveals why it can improve your product and simplify fastening

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The Two-Way is always right side up. Ideal for hand or hopper feed.

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More care in tapping produces threads that far exceed industry's minimal standards.

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Puts the lock in the center of the nut. Does not affect top and bottom threads—permits easy starts. Allows bolt end to be flush with, or below, top of nut.



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Two-Way "Bump" produces barely perceptible thread deflection that gives dependable locking torque.

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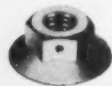
LOCK NUTS

AVAILABLE AS:

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Sizes: No. 6 thru 1 1/4"



FLANGE NUTS,  
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CHICAGO 40, ILLINOIS

## Purchasing People

(Continued from page 138)

be responsible for all SBA programs in the field of procurement and technical assistance, including assistance to small firms in obtaining government prime contracts and subcontracts and sharing in government surplus property sales; issuance of certificates of competency; research and development assistance, and production and products assistance.

**B. L. Willmore**, vice president and director of procurement and materials, has been elected a member of the board of directors of **Bemis Bro. Bag Company**, St. Louis, Mo. Mr. Willmore became associated with Bemis in 1946 as price economist in the company's



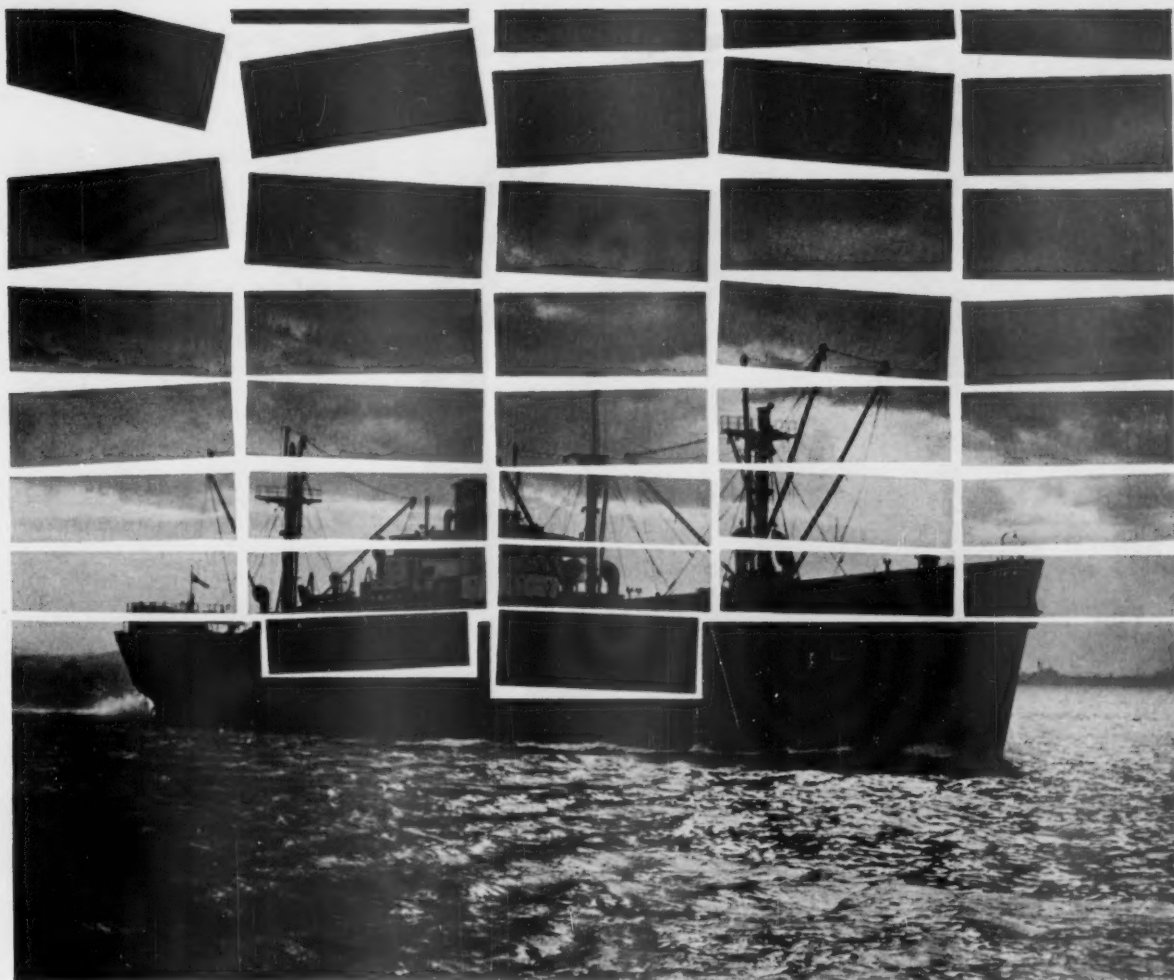
**B. L. Willmore**

general sales department, St. Louis. He served as supervisor of pricing, head of the sales economics section and, in 1958, was elected assistant secretary of the company. He was elected vice president and director of procurement and materials in February 1960.

**Dayton Steel Foundry**, Dayton, Ohio has named **William Underwood** director of purchasing. Mr. Underwood succeeds **James A. Graham**, who has retired after 43 years as purchasing agent. The new purchasing director previously with Ford Motor Company purchasing for ten years, joined Dayton in 1960. Mr. Graham remains as secretary of the firm.

For More Facts Write No. 250 on Information Card—Page 32





*For New York Shipbuilding Corporation,*

## **CORO-GARD® 1706 STOPS PICKLING TANK LEAKS,** BRAND COATING **PUTS PROTECTION ANSWERS IN PLACE!**

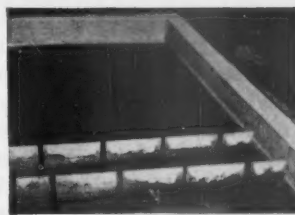
New York Shipbuilding Corporation, Camden, N.J., formerly had to repair pickling tank leaks every 4 to 6 weeks. A 15% sulphuric acid solution penetrated the coating then used—caused tank corrosion and leaks. Now, all exposed tank surfaces are protected by CORO-GARD 1706 Brand Coating, and *no leaks have occurred during more than a year's constant contact with the acid solution!*

CORO-GARD 1706 Coating also withstands such corrosive fluids as hydrochloric acid solutions, distilled and salt water, and alkalies, even at continuous heat up to 120°F. It resists attacks by weather, ozone, oxygen and many indus-

trial atmospheres—wards off erosive attack by abrasive-laden liquids. CORO-GARD 1706 Coating is easily applied by brush to unprimed steel, aluminum, copper, galvanized steel, concrete, wood and some plastics. It air-cures to a tough, rubbery protective film.

What can CORO-GARD 1706 protect for you? Call the nearby 3M Field Engineer for technical assistance and information. He can also provide detailed data about hundreds of other 3M adhesive, coating and sealer formulations created to solve specialized problems in protection and fastening. Or write AC&S Division, 3M Co., Dept. SBCC-31, St. Paul 6, Minn.

"CORO-GARD" is a reg. TM of 3M Co.



Pickling tank protected with CORO-GARD 1706 Coating experienced no corrosion, no leaks after more than a year's exposure to 15% solution of sulphuric acid.

ADHESIVES, COATINGS AND SEALERS DIVISION  
**MINNESOTA MINING AND MANUFACTURING COMPANY**

... WHERE RESEARCH IS THE KEY TO TOMORROW





## how much band saw mileage do you get?

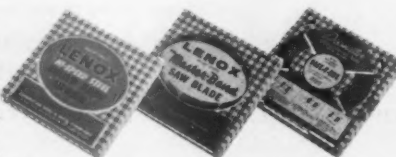
"Not enough!" This is the most frequent answer. Why? Our recent field survey shows wrong blade type or wrong specifications are used in over 50% of band saw cutting. What's the solution? Choose one of THREE proven band saw blades LENOX has developed to cut rapidly, efficiently, and at lower costs. These LENOX blades, cover the complete range of today's cutting needs.

**HIGH SPEED STEEL**—Used on automatic cut-off equipment in full production work. This band will rapidly cut most of the tougher steels. **MASTER-BAND**—A special alloy steel band for standard equipment, used in cutting at semi-production or production rates. Also used on some automatic cut-off applications. **DIEMASTER**—Regular metal cutting, cut-to-length bands or coil stock. Used for general purpose cutting or where only 1 to 2 bands per week are used. Interested in increasing your band saw mileage? Start by getting a true appraisal of your cutting operations. Write American Saw, Cutting Analysis Department. Submit a brief description of your machine, materials being cut, and type of operation. Recommendations and sales engineering help are furnished without obligation.

THE TOOLS IN THE PLAID BOX

# LENOX

**AMERICAN SAW  
& MFG. COMPANY**  
SPRINGFIELD 1, MASS.



For More Facts Write No. 252 on Information Card—Page 32

## Reward New Ideas

(Continued from page 79)

novation, is \$500 monthly.

On the same monthly basis  $p$ , the price-cut gain, amounts to 20 cents times 500, or \$100 additional dollars monthly we can save by using the innovator's brains and the copier's price.

These are clear-cut figures, but the figure  $t$ —the estimated time it would have taken to arrive at the innovation without the innovator—is just a guess. This is where the buyer's experience and judgment come in. As  $t$  changes, so does the answer.

But we are choosing  $t$  to find our logical time merely as a guide. It is not final. So we can take a stab at  $t$ . Let's say  $t$  is six months, the best estimate we can make.

$$\begin{aligned} \text{Then } x &= (6) \$500 / \$100 \\ &= (6) 5 / 1 = 30 \text{ months.} \end{aligned}$$

Let's do a little thinking: If our assumption of six months for  $t$  is correct, can we justify paying the \$3.00 price for 30 months?

In six months the innovator's cost saving we gain is \$3,000. At \$100 per month, it will take the price cut a full 30 months to amass this kind of saving; and during the 30 months the cost saving from the innovation will have hit a total of \$15,000.

The logical time, then is 30 months. The buyer has a tool. He can use it for the benefit of both the supplier and his own company, and, if he doesn't follow it exactly, how can anyone say exactly how long time  $t$  should be?

But he has broken the problem into its elements. Depending on  $t$ , he can see the reward due the innovator, without whose work there could be no price saving at all.

But, how about this business of estimating time  $t$ ? Doesn't the whole thing fall apart here? Rather it would seem that here the purchasing agent pulls the whole thing together with his judgment.

All the other figures can be run through a machine. But only the buyer can evaluate. And in this particular problem he has a useful tool to aid in his evaluation.

► END



## Call Crucible for special steels and special service

Crucible's inside account salesman confirms availability and delivery of any specialty steel — while you're on the phone.

In fact, he can confirm local delivery of any of the thousands of specialty steel items he carries in stock.

He takes personal responsibility, too, for cutting through any problems of

scheduling, shipping or processing that may be plaguing you. He can also arrange for heat treating, forging, buffing, etc. at the lowest possible cost. And he'll answer your questions about metalworking, or get help if he can't.

He makes steel-buying easy because he's a trained, experienced steelman — who knows the most efficient means of getting alloy, tool and stainless steels

from Crucible to you. Just ask for the inside account salesman at the local Crucible steel center. Or write: *Crucible Steel Company of America, Four Gateway Center, P.O. Box 88, Pittsburgh 30, Pa.*



**CALL CRUCIBLE**  
— and ask to have your name added to the mailing list to receive local stock lists.



**CRUCIBLE**

**STEEL COMPANY OF AMERICA**



# SOLUTION DISSOLVES GLASS BUT DOESN'T AFFECT AUTRONEX GOLD PLATE!

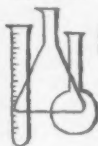
Autronex Gold Plated transistor headers were suspended in C.P.—4 solution (nitric, acetic and hydrofluoric with bromine) for several hours... the header's glass seals dissolved, the Gold Plate remained intact.

This dramatic experiment, carried out by one of the country's prominent manufacturers of semiconductor products, demonstrates some of the superior metallurgical properties of electroplate produced with the AUTRONEX ACID GOLD PLATING PROCESS—for all industrial applications.

The simple to prepare bath is mildly acidic (pH 3.5—4.5), operates at room

temperature, and produces deposits which are mirror-bright in any thickness. AUTRONEX electroplates also offer approximately 75% greater resistance to abrasive wear over conventional Gold plate.

For complete details on uses, bath preparation, equipment required, etc., ask for #EG-1.



AUTRONEX EASILY PASSES ALL RIGID PERFORMANCE-ACCEPTANCE TESTS

- SALT-SPRAY TEST
- MANDREL-BEND TEST
- BOILING WATER TEST



**SEL-REX CORPORATION**

NUTLEY 10, NEW JERSEY

The world's largest selling precious metal electroplating processes

For More Facts Write No. 256 on Information Card—Page 32

## New Look in Purchasing Education

(Continued from page 83)

Who are the participants in the MI program?

They come from companies in Wisconsin and Illinois, ranging in employees from 250 to 20,000 and in sales from \$280,000 to \$540,000,000. The men have been in their positions from 1 to 18 years and are in departments of from 3 to 260 employees.

Two-thirds have a college education. All have backgrounds of active participation in internal and external training programs.

Stilwell looks at the entire project as an encouraging sign for the future of purchasing management. He believes that it's a dramatic illustration of the desire of purchasing personnel to improve themselves and to grow in management responsibility.

After four years of study, the participants will have a comprehensive idea of the broad relationship of management to purchasing. They will be richer for it and so will their companies.

► END

*motors like these  
help your product  
**STAY AHEAD**  
of competition...*

Lamb Electric works in so many fields—where motors that have vastly different jobs to do are sold to vastly different markets—that experience gained in one field often helps solve problems in other fields.

For example, we are able to incorporate in motors for appliances, portable electric tools, and similar products, developments that came about in research and engineering work on military and other precision motors.

This broad experience—available to all of our customers—is one way in which Lamb Electric special application motors can help your product stay ahead of competition.

Let us demonstrate the value of this experience in bringing to your customers improved products and to you more business and better profits.

# Lamb Electric

SPECIAL APPLICATION  
FRACTIONAL HORSEPOWER **MOTORS**

**THE LAMB ELECTRIC COMPANY • KENT, OHIO**

A Division of American Machine and Metals, Inc.

In Canada: Lamb Electric—Division of Sangamo Company Ltd.—Leaside, Ont.

For More Facts Write No. 254 on Information Card—Page 32

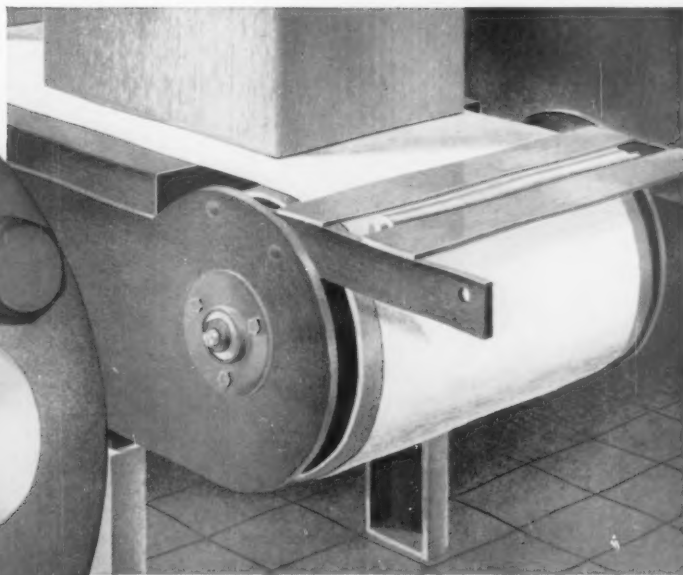
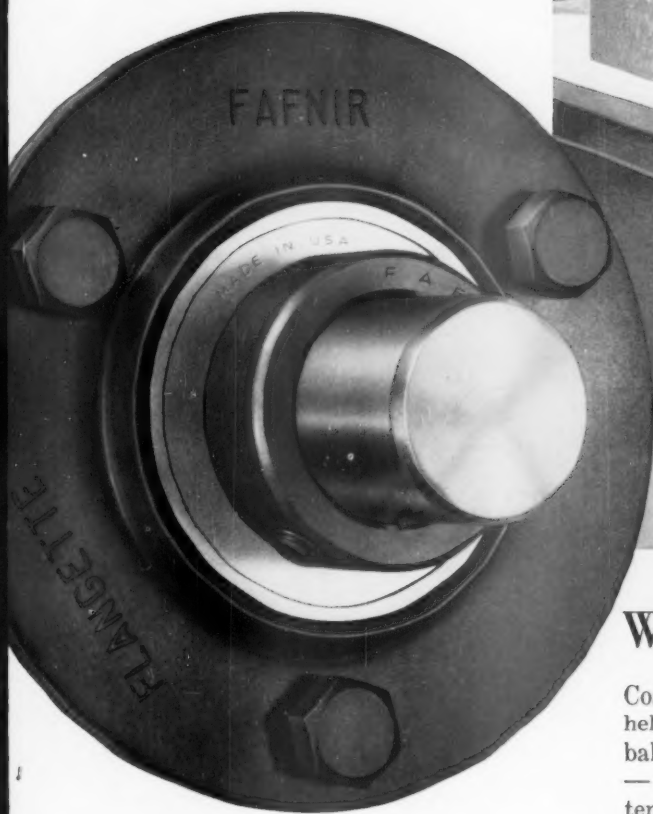


For More Facts About Ad  
on Facing Page Write in No. 255→

Look to

**FAFNIR**

for leadership in ball bearings



### Where cost is your problem...

Costs can nip good design ideas in the bud. Fafnir helps cut costs with Flangette Units. Millions of these ball bearing "economy packages" — a Fafnir "first" — are used to improve performance and reduce maintenance on products ranging from small conveyors to giant combines. When you're up against costs... or *any* bearing problem... look to Fafnir. The Fafnir Bearing Company, New Britain, Connecticut.

50 YEARS OF EXPERIENCE  
IN THE MANUFACTURE OF  
BALL BEARINGS

For More Information  
Write No. 78 on Place Mark Card

**FAFNIR**  
**BALL BEARINGS**

Look to  
**FAFNIR**  
for leadership in  
ball bearings



## Where dirt is your problem...

Dirt is cheap . . . but not when it gets into bearings. It handicaps production . . . runs up costs . . . shortens product life. How to keep dirt out? Disc harrow makers do it with Fafnir Ball Bearings . . . triple-sealed to "run clean" where it's dirtiest. When you're up against dirt . . . or *any* bearing problem . . . look to Fafnir for the diversity, the capacity, the research to find your answer. The Fafnir Bearing Company, New Britain, Conn.



# FAFNIR

## BALL BEARINGS

For More Information  
Write No. 79 on Place Mark Card



## IDP Cuts Day From Purchasing Cycle

(Continued from page 86)

writes a purchase order proof copy, using the tape for automatic entries. Master tapes supply shipping instructions, but vendor information and other minor entries are made manually. The vendor entry is made manually since it would take more time to pull a tape, insert it in the machine, and refile it, then to type the information.

The preparation of the purchase order proof copy also creates a by-product tape with all information on it. After checking the proof against the original, the operator inserts the final tape in the on-line transmitter and an eight-part purchase order is prepared while transmission to receiving and tabulating is taking place. Again, minor corrections may be made during transmission.

### Who Gets Copies?

Invitations to bid may be prepared in a similar way except that no purchase order is made out at this time. All the forms used in the complete system are continuous, marginally punched and of the same size. Basically, they have the same design with but minor variations in the heading and body portions. This is essential since information must appear in the same places from station to station.

The eight-part purchase order consists of two copies for the vendor, one of which is an acknowledgment for return to Babcock & Wilcox; a copy for the expediter; a master for running off additional copies where required; a general production control copy; a requisitioner's copy; a spare copy for distribution; and a copy for the purchasing department's vendor file. The order is signed by the buyer before distribution.

The other three requisitioning procedures do not become automated until they reach purchasing. Traveling requisitions and requisitions for expense items and capital equipment still originate manually, but master tapes for repetitive information are being prepared and will cut preparation

(Please turn to page 148)

# "CALL FOSTER... THEY'LL SHIP PIPE PLUS"



Right! Whether it's a routine order or an emergency request for unusual or hard-to-get sizes, Foster gives you pipe "plus."

You get all your pipe when and where you need it, cut to length or fabricated in complete-package shipments, at lowest possible cost.

For non-pressure applications, check the unusual savings on Foster Structural Pipe. Foster's nationwide warehouses stock Tested & Structural Steel Pipe, 1/8" through 48" in all sizes and walls—"plus" Stainless, Seamless, Alloy, Pressure, Aluminum, Wrought Iron, PVC Pipe and Valves, Fittings, Flanges.

Write L. B. FOSTER CO. for latest Stock List PA-3  
Pittsburgh 30 • New York 7 • Chicago 4 • Cleveland 35  
Houston 2 • Los Angeles 5 • Atlanta 8



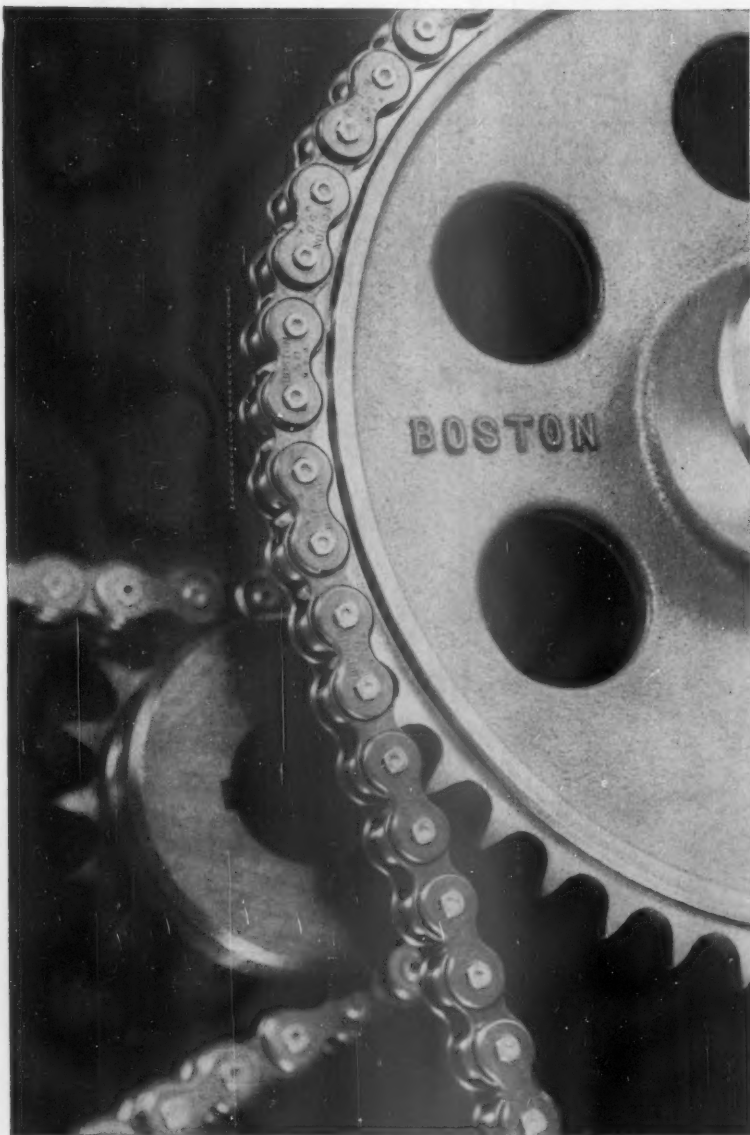
## *Faster From Foster*

PIPE • PILING • RAIL

For More Facts Write No. 257 on Information Card—Page 32

# **BOSTON<sup>®</sup> Gear** QUALITY

## sprockets and chain



Advt. copyright by Boston Gear Works, Quincy 71, Mass.

1488 types and sizes. From local stock.

Off the shelf - at factory prices.

For any chain drive 1/4" to 2" pitch -  
Roller, Block, Ladder. See Catalog 57.

Design around the quality leader.

# **BOSTON<sup>®</sup> Gear**

**IN STOCK at your nearby DISTRIBUTOR**

For More Facts Write No. 258 on Information Card—Page 32

### **IDP Cuts Day From Purchasing Cycle**

*(Continued from page 147)*

time by a considerable amount.

Previously, purchasing had to contend with too many loose copies and cumbersome spirit duplicating. Then, personnel was handling about 150 to 160 pages a day with two more people than it has now. Today the department is handling up to 220 pages a day and expects to reach 248 in the future. Other benefits include buyers' better control over the progress of an order, and faster distribution of order copies.

In receiving, the transmission from purchasing is entered automatically on a five-part set of forms. No by-product tape is prepared. When the material comes in, the receiving clerk removes the forms from an open file, enters necessary information by hand, and distributes the copies.

Through codes in purchasing's transmitting tape, only the information needed by receiving arrives there. All clauses, prices, terms, etc., are eliminated, making the paper handling in receiving much simpler and less bulky.

### **Speeds Contract Budgets**

The teletype system has eliminated writing a separate receiving report for the 80% of incoming shipments that arrive complete. When a shipment is partial, a typist duplicates the five-part set, showing only the balance due, and files the set with the other open orders. The five-part set includes copies for receiving file, material destination, tabulating, shop, and accounts payable. Eliminating receiving reports naturally saves a lot of time; it permits incoming materials to move out to the shop much faster than ever before.

The cycle is completed in tabulating. There the transmission from purchasing becomes a one-part form and a by-product tape. The information is the same as that recorded in receiving, but with price information added. Operators convert the tape to punched cards which go to accounts payable. Since both tabulating and accounts payable get

copies of the receiving set, incoming shipment information can easily be added at the same time.

With all information in its hands almost as soon as available, accounts payable can prepare up-to-the-minute budgets and make cost reports for each contract while in progress.

#### **P.A.'s Use Weekly Reports**

The tabulating section runs weekly order reports of various kinds. Although the week closes on Wednesday, these reports are in the hands of management by Friday. They provide breakdowns by buyer, vendor, purchase order number, contract, and material type in many combinations. Thus purchasing and other departments have a complete picture of each contract and stock purchase order every week.

Although B & W produces boilers in plants throughout the country, purchasing operations are centralized in Barberton. All customer orders come into Barberton. If the boiler is to be fabricated elsewhere, purchase orders will specify delivery to that works. The outer works also keep inventory records and report monthly to Barberton as to stock on hand, allocations, requirements, etc. Barberton maintains records for all works, and orders material for them as necessary.

► END

—COMING—

#### **PURCHASING MAGAZINE'S ANNUAL VALUE ANALYSIS ISSUE**

**Hundreds of Cost-Saving  
Case Histories, plus a  
study of General Electric  
Company's Pace-Setting  
Value Buying Program.**

**Watch For It  
MAY 8**

## **BOSTON<sup>®</sup> Gear QUALITY** bored-to-size pinions



Advt. copyright by Boston Gear Works, Quincy 71, Mass.

**86 sprocket pinion sizes with 360 bore sizes.**

**From local stock. Ready to install.**

**Off the shelf - at factory prices.**

**Complete with keyway and set screw.**

**Save machining cost. See Catalog 57.**

## **BOSTON<sup>®</sup> Gear**

**IN STOCK at your nearby DISTRIBUTOR**

**For More Facts Write No. 259 on Information Card—Page 32**



# Employment Service

**Experience:** Six years as P.A.—150 bed cr. hospital—buyer of surgical equipment and supplies. Supervised competitive bidding, production, evaluation and preparation of specification sheets. Buyer of linen, laundry, housekeeping, stationery forms and supplies. Established new system of stores, shipping and receiving. Four years with large San. Fran. bank. Experience with tabulating forms, office equipment and machines. Presently employed. Age 40.

**Education:** Courses in principles and fundamentals of purchasing analysis. Eighty-four hours night course at Bank Operations and Negot. Inst.

**Will relocate:** San Jose, Calif.—within 15 mile local area.  
**Write:** Box 375

**Experience:** Two years as P.A. in the non-ferrous metals industry. Familiar with all phases MRO procurement in multi-plant operations, value analysis, contracts, expediting, inventory control, industrial insurance. Age 27.

**Education:** Six years college, engineering, marketing, bus. adm. B.S. degree in marketing & bus. adm.

**Will relocate.**  
**Write:** Box 384

**Experience:** Seven years industrial purchasing with international machinery manufacturer. Five and one half years expediting, buying, and assistant P.A. Past one and one half years for heavy purchases of steel (plates, sheets, structurals, and tubing)—both mill and warehouse, various alloys, castings, motors, transmissions, electrical and mechanical controls, bearings, fasteners, welding equipment and supplies, plant and office maintenance and supplies. Light purchases of electronics and chemicals. Experience in sub-contracting. Two years accounting and cost analysis. Salary \$7800. Age 35.

**Education:** B.S. education from Mid-western university. Post graduate courses industrial purchasing and blueprint reading.

**Will relocate.**  
**Write:** Box 374

**Experience:** Ten years diversified experience in chemical and atomic energy fields both in production and construction buying. Knowledge of government purchasing procedures. Purchase steel, pipe, valves, fittings, production tools, electrical supplies, paint, lumber, refractories, maintenance and office supplies. One year full-time value analysis.

**Education:** B.B.A. marketing, M.B.A.—transportation and traffic management.

**Will relocate.**  
**Write:** Box 383

**Experience:** Seven years in large dollar volume purchase of highly engineered precision machined parts, assemblies and weldments under both fixed price and cost-plus prime contracts; and over twelve years of manufacturing and sales experience. Value analysis experience, strong administrative ability and high degree of flexibility.

**Education:** B.A. degree.

**Will relocate.**  
**Write:** Box 385

**Experience:** Sixteen years in industry. Four years in plant engineering work and twelve years in purchasing. Responsible for purchasing such items as steel products, refractory materials, chemicals, hardware items, and miscellaneous items used by multimillion dollar aluminum producing plant. Age 40.

**Education:** B.S. in chemistry.

**Will relocate.**  
**Write:** Box 392

**Experience:** Over ten years purchasing for heavy industry. Diversified commodities; machinery, steel, castings, fuels, electrical & mechanical components, etc. Sound knowledge of systems and procedures and cost saving concepts relating to purchasing policies. Familiar with all phases of procurement function; price negotiation, value analysis, scheduling, etc. Seeking position as buyer, senior buyer or asst. P.A.

**Education:** Three years college in bus. adm. — marketing major. Evening courses in purchasing and management.

**Will relocate.**  
**Write:** Box 389

## HOW TO APPLY

Listings in this department are offered without charge. Both purchasing department personnel interested in changing jobs and employers in search of replacement or additions to their departments may take advantage of this service. When writing, specify whether you want the applicant's form or the employer's form. Address all correspondence — whether for forms, or in answer to an employment advertisement, to: Box No. Employment Service Department, Purchasing Magazine, 205 East 42nd Street, New York.

**Experience:** Purchasing and Materials Management—with experience in planning, organization, direction, coordination, control authority and responsibility for full program. Seven years material manager, P.A. gov't electronics R&D and mfg lab. One year P.A. material control mgr. multi-div. electro-mech. mfg. co. Also consultant in materials, mktg., econ. Extensive successful exper. in purch., all commodities; contracts; budgeting and cost acctg; simplification and standardization; value analysis; inv. and mat flow control and coord.; training; policy formulation, coord., control—staff and line. Manual and EDP systems. Age 35. Salary 5 figures. Seek challenge and growth.

**Education:** A. B., correspondence courses, M.B.A.

**Will relocate.**  
**Write:** Box 388

**Experience:** Executive corporate administrator. Approximately 20 years experience in purchasing, sales, brokering and trading, manufacturing and promotion. Worked in metals and allied fields. Familiar with all corporate procedures. Have imported and exported metals. Have experience in forms and ability to lead and work without supervision.

**Education:** College and Bus. courses  
**Will relocate.**  
**Write:** Box 386

**Experience:** Purchasing eight years. Last four as asst. P.A., heavy industry. Experience in all items but heavy in large equipment, castings, fabrications, construction contracts. Managed purchasing for multi-million dollar expansion. Strong background in administration, procedures, negotiations, inventory control, value analysis. Desire administrative position on management team.

**Education:** B.S. in economics—marketing major.

**Will relocate.**  
**Write:** Box 387

**Experience:** Ten years of versatile industrial traffic experience including department manager. Thorough knowledge in securing the most value for the transportation dollar. Experienced in conducting traffic analytical programs. Desire a traffic or traffic and purchasing position offering challenge and permanent progressive association. Resume available. Age 36.

**Education:** BBA degree (marketing and merchandising, economics, industry)

**Will relocate.** (Currently employed in Cleveland area.)  
**Write:** Box 382

# how PARISH CUT COSTS, saved time for another manufacturer

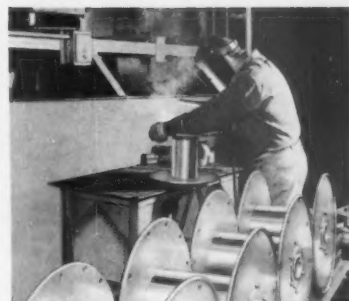


**problem:** A big user of wire cable needed wire reels requiring close parallel tolerances between heads in large quantities, at low cost—and fast!

**solution:** Parish engineers quickly blue-printed the problem and production specialists went to work. Soon Parish's skilled craftsmen, using the most modern precision machinery, were turning out 50,000 reels a month . . . meeting every specification perfectly, and on time.

Parish specializes in solving production problems involving metal parts of all sizes, shapes, and forms. It is equipped to mass-produce precision parts at reasonable cost.

Perhaps Parish can help you • Write or telephone next time you have a parts production problem.

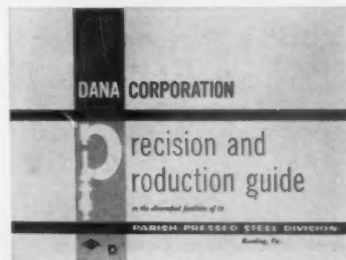


Bolts were welded to heads of wire reels to prevent back-out when reel is in high-speed operation. Main illustration shows how each reel was carefully tested before being shipped.

**PARISH**  
PRESSED STEEL  
DIVISION OF DANA CORPORATION • READING, PENNSYLVANIA



Write for your copy of this illustrated booklet describing the diversified facilities available to you at Parish.



# Advertisers In This Issue

<b>A</b>		Hussey & Company, C. G. .... 123	Stackpole Carbon Co., Carbon Div. .... 104
Allegheny Ludlum Steel Corp. .... 105, 106, 107, 108		<b>I</b>	
Allis, Louis, Co. .... 50		Illinois Gear & Machine Co. .... 41	
Allmetal Screw Products Co., Inc. .... 48		Industrial Retaining Ring Co. .... 45	
Alloy Steel Products Co., Inc. .... 136		Inland Container Corp. .... 66	
American Machine & Foundry Company, Thompson-Bremer & Company, Division ..... 109		Inland Steel Company ..... 34, 35	
American Saw & Mfg. Co. .... 142		<b>J</b>	
American Viscose Corporation ..... 63		Jeffrey Manufacturing Company ..... 33	
Anaconda American Brass Company ..... 2nd Cover		Jenkins Bros. .... 4th Cover	
Ansul Chemical Company ..... 134		Jones & Laughlin Steel Corp. Cold Finished Bar Products Division ..... 94, 95	
Association of Bearing Specialists ..... 22		Justrite Mfg. Co. .... 122	
<b>B</b>		<b>K</b>	
Bassick Co., The ..... 32		Keystone Steel & Wire Company ..... 135	
Blaw-Knox Company—Equipment Division ..... 132		<b>L</b>	
Boston Gear Works ..... 148, 149		Lamb Electric Company, The ..... 144	
Bound Brook Oil-Less Bearing Company ..... 6		Lancaster Glass Corp. .... 114	
Bower Roller Bearings Div.—Federal Mogul Bower Bearings, Inc. .... 101		Linde Company, Division of the Union Carbide Corporation ..... 24	
Braun Gear Company ..... 109		Logan Company—Builders Iron Div. .. 93	
Bulldog Electric Products Division I-T-E Circuit Breaker Co. .... 26		Ludlow-Saylor Wire Cloth Co. .... 42	
<b>C</b>		<b>M</b>	
Century Electric Company ..... 1		MacLean-Fogg Lock Nut Company .... 140	
Chicago Lock Company ..... 137		Magnetic Metals Co. .... 64	
Chicago Rawhide Mfg. Co. .... 121		McLouth Steel Corporation ..... 125	
Chrysler Corp., Amplex Div. .... 110		Metal & Thermit Corp. .... 111	
Colorado Fuel and Iron Corporation—Eastern Div. (Woven Wire Prods.—Belts) ..... 131		Minnesota Mining & Mfg. Co. .... 141	
Columbia Southern Chemical Corp. .... 126		Moore Business Forms ..... 117	
Connecticut Harb Rubber Company .... 112		Moore, George W., Inc. .... 122	
Continental Diamond Fibre Corp. .... 44		<b>N</b>	
Copperweld Steel Co., Ohio Seamless Tube Division ..... 60, 61		National Cash Register Co., The ..... 119	
Cordley & Hayes ..... 96		National Lock Company ..... 127	
Crucible Steel Company of America .. 143		National Supply Division, Armco Steel Corporation ..... 99	
<b>D</b>		Newark Wire Cloth Company ..... 59	
Dayton Industrial Products Co. A Division of Dayton Rubber Co. .... 55		New England High Carbon Wire Corp. .... 96	
Delta File Works, Inc. .... 130		Norton Company ..... 90, 91	
Dolke Co., C. E. .... 131		<b>O</b>	
Dow Chemical Co., The ..... 10		Oakite Products, Inc. .... 37	
Dow Corning Corporation ..... 89		Ohio Rubber Company ..... 36	
Du Pont de Nemours & Co., Inc., E. I., Fabrics Div., Elastomers ..... 115		Ohio Seamless Tube Division of Copperweld Steel Co. .... 60, 61	
<b>E</b>		Owens Illinois Glass Company ..... 97	
Elastic Stop Nut Corp. of America .... 28		<b>P</b>	
Enjay Chemical Company a division of Humble Oil & Refining Co. .... 53		Parish Pressed Steel Division ..... 151	
Ex-Cell-O Corporation ..... 47		Peterson Steels, Inc. .... 65	
<b>F</b>		Philadelphia Gear Corp. .... 54	
Fafnir Bearing Co. .... 145, 146		Porter, H. K., Company, Inc., Disston Division ..... 30	
Federal Tool & Mfg. Co. .... 131		Powell, William, Company, The ..... 14	
Foster, L. B., Company ..... 147		Purchasing Magazine ..... 118	
Franklin Electric Company ..... 100		<b>R</b>	
<b>G</b>		Ren-Plastics, Inc. .... 137	
Gates Rubber Company ..... 8		Republic Rubber Division ..... 136	
Gaylord Container Division, Crown Zellerbach Corp. .... 133		Riegel Paper Corporation ..... 58	
Goodyear Tire & Rubber Company, Industrial Products ..... 20, 21		Rogers, Dayton, Mfg. Co. .... 100	
Graphic Controls Corporation ..... 46		Rome Cable Division of Alcoa ..... 139	
Graybar Electric Co., Inc. .... 4		Russell, Burdall & Ward Bolt & Nut Co. .... 153	
Great Lakes Steel Corp.—National Steel Corp. .... 56, 57		Rust-Oleum Corporation ..... 43	
Grip-Nut Company ..... 100		Ryerson, Joseph T., & Son, Inc. .... 12	
<b>H</b>		<b>S</b>	
Hardinge Brothers, Inc. .... 25		Sandvik Steel, Inc. .... 113	
Hoover Ball & Bearing Company ..... 51		Sel-Rex Corporation ..... 144	
Hubbell, Inc., Harvey, Machine Screw Dept. .... 112		Sheffield Division—Armco Steel Corporation ..... 154	
		Shell Oil Company ..... 62	
		Sier-Bath Gear & Pump Co., Inc. .... 124	
		Snap-on-Tools Corp. .... 98	
		Square D Company ..... 3rd Cover	
		<b>T</b>	
		Thompson-Bremer & Company Division of American Machine and Foundry Company ..... 109	
		Thor Power Tool Co. .... 102, 103	
		Tube Turns Divisions of Chemetron Corp. .... 35, 39	
		<b>U</b>	
		Udylite Corporation ..... 128, 129	
		United States Steel Corporation ..... 2, 3	
		U.S. Steel Supply Division of United States Steel ..... 49	
		<b>W</b>	
		Waldes Kohinoor, Inc. .... 18	
		Wales Strip Inc. .... 16	
		Wiley, John & Sons, Inc. .... 134	
		Wyckoff Steel Co. .... 138	
		<b>Y</b>	
		Yale & Towne Mfg. Co. .... 68	

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## ***Gains special part at half cost***



**RB&W survey seeks out ways to economize  
with cold formed special parts  
as well as with standard fasteners**

Standard fasteners and many cold formed parts are closely related. They're offspring of the same machine. When called in to survey fastener usage, therefore, the RB&W Man can also ferret out those special parts which could be produced faster and for less money on RB&W's cold headers or nut formers.

The hand-held part above, for example, is a car trunk hinge spacer. Its cost was cut 50% when RB&W cold-formers took on the job of pounding them out at high speed, smoothly finished, and ready for installation.

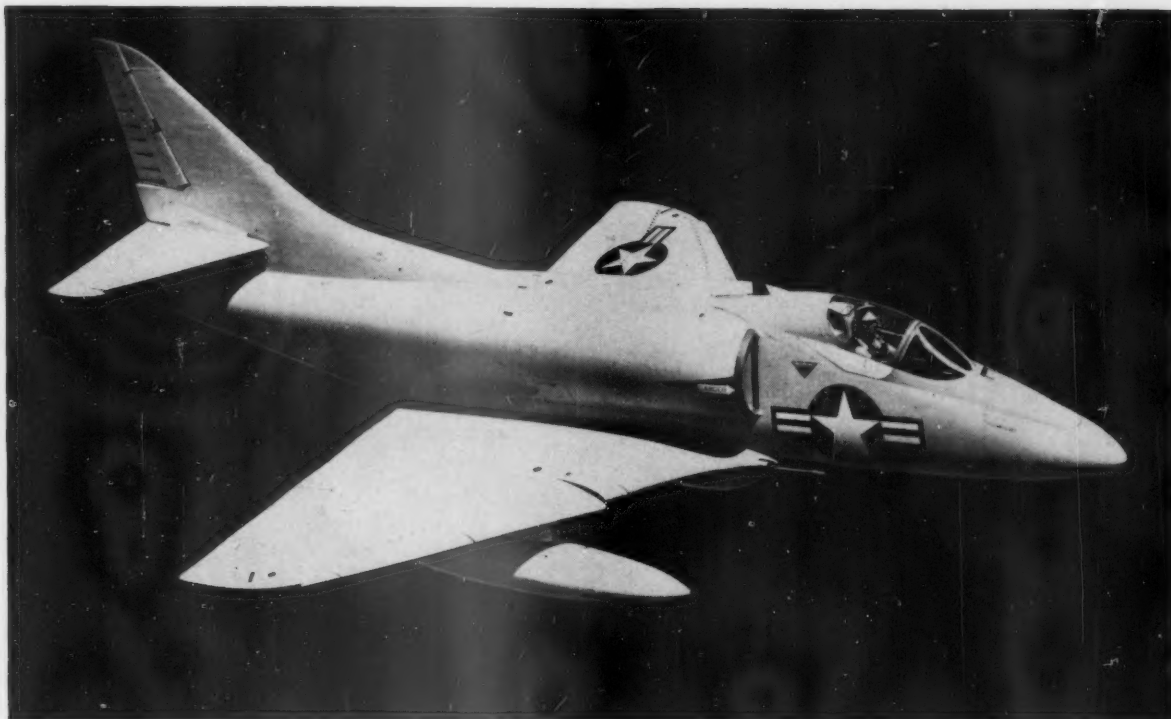
By buying such parts, instead of making them, you save in one or more ways, (1) There's less machin-

ing time—or none at all. (2) Assemblies of several small pieces can be made as a unit—reducing assembly costs. (3) When shape of piece is such that you would have to machine excessively from relatively large diameter rod, you avoid heavy scrap loss. Sometimes cold forming becomes the *only* way to economically produce a piece—as for example, the eccentric cam shown above.

To get the most from your dollar in standard fasteners or specials, find out what the RB&W Fastener Specialist can do in cooperation with your engineers. Or write about your requirements in special parts directly to Russell, Burdsall & Ward Bolt and Nut Company Port Chester, N.Y.



**Plants at:** Port Chester, N. Y.; Coraopolis, Pa.; Rock Falls, Ill.; Los Angeles, Calif. **Sales office and warehouse at:** San Francisco, Calif. **Sales offices at:** Ardmore (Phila.), Pa.; Pittsburgh; Detroit; Chicago; Dallas. **Sales agents at:** Cleveland; Milwaukee; New Orleans; Denver; Fargo. **Distributors coast to coast.**



*Sheffield's Alloy Steel Center Helps Put This*

## **Tough Customer in the Sky**

*tough alloy steel from Sheffield in many parts*

Here you see the A4D-2N Skyhawk, versatile attack bomber of the U. S. Navy and Marine Corps. Though America's smallest and lightest jet combat airplane, the Skyhawk packs a heavyweight punch—can even carry guided missiles and nuclear bombs.

Built for action, speed and durability, the Skyhawk has stamina in every part. And many of these parts are fashioned from 4130 Aircraft Quality Plate—a product of Sheffield's Houston plant, the alloy steel making center for the Gulf, Southwest and West. Quantities of this same plate also take to the air with the B-47 bomber. Other Sheffield alloys are part and parcel of the Redstone and Nike missiles.

Fine constructional alloy steels are a specialty of the Houston plant. Alloying elements range through the chemical alphabet from Aluminum to Zirconium. Whatever the need for strength,

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### **SHEFFIELD**

**Heat Treated  
Carbon and  
Alloy Steels**

Strong  
Tough  
Economical  
Efficient  
Lasting



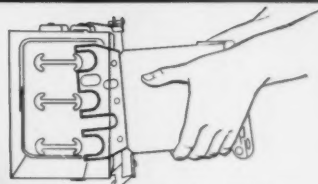
## **ARMCO Sheffield Division**

For More Facts Write No. 262 on Information Card—Page 32

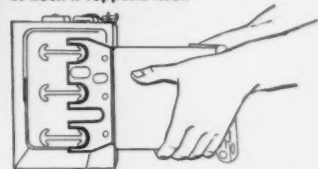
# Why SQUARE D ALUMINUM PLUG-IN DUCT?

Because you want a duct  
that's rugged — built to  
thrive on heavy duty — *plus*

## PLUG-IN UNITS GIVE YOU EXCLUSIVE *hook-swing* MOUNTING



Hook clip at top of plug-in unit to top of duct. It supports itself



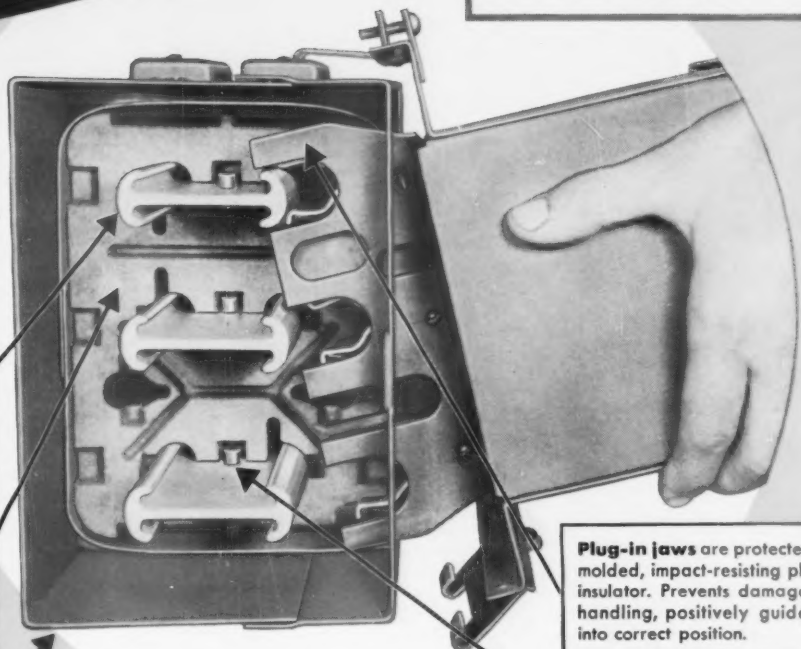
Then, just swing plug-in unit down until jaws engage bus bars

**Hanger mounting** (not shown) makes installation easy. A universal hanger permits mounting in any position. Just suspend and level top portion of hanger, then clip on lower portion. U.L. approved for 10-foot spacing.

**I-beam construction** of bus bars—a Square D exclusive—provides four times the strength of conventional bus bars. Bars are zinc, copper and silver-plated full length.

**Full width bus support** provides greater strength on short circuits, freedom from vibration. Also acts as fire stop where duct passes through walls and floors.

**Square D duct is totally enclosed** for maximum safety—no danger of accidental shorts. Prevents overheating from dust accumulation.



**Plug-in jaws** are protected by a molded, impact-resisting phenolic insulator. Prevents damage from handling, positively guides unit into correct position.

**Steel pins** in each bus bar prevent bars from shifting and support them on vertical riser installations.

With other plug-in duct, it's no easy job to mount the plug-in units. In fact, it takes a lot of real pushing which is neither safe nor easy when you're working on a ladder. With Square D's exclusive *hook-swing* mounting, you just hook the plug-in unit to the top of the duct. Then, simply swing it down and in until the jaws have engaged the bus bars. No awkward

pushing required—no unnecessary chances to take. Compare Square D's rugged, heavy-duty construction with any other. It costs no more—why settle for less?

Write for Bulletin SD-110. It gives the facts on Square D aluminum plug-in duct. Address Square D Company, Mercer Road, Lexington, Kentucky



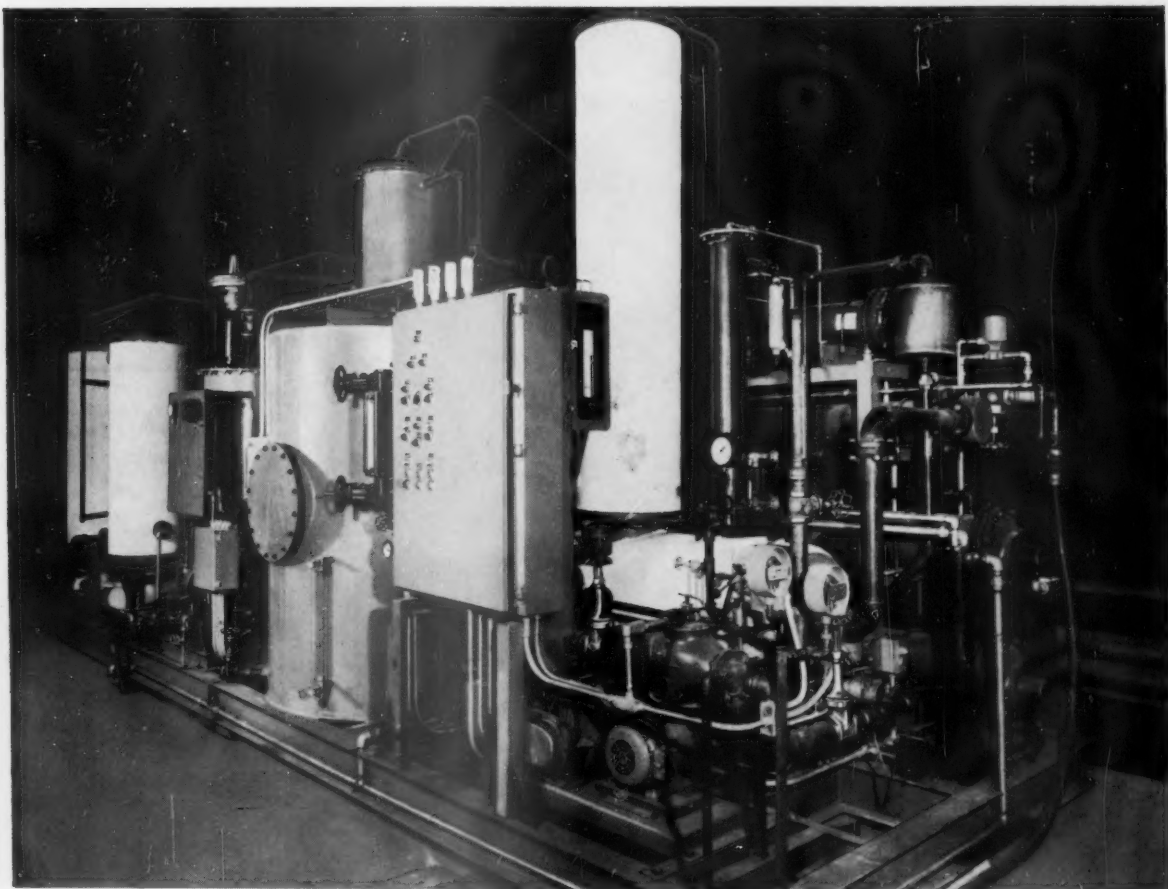
## SQUARE D COMPANY

wherever electricity is distributed and controlled

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*"We Won't Take Chances  
with Customer Confidence..."*



*...our Atmosphere  
Generator Systems  
incorporate  
**JENKINS VALVES**"*

Gas Atmospheres, Inc., Cleveland

*"A reputation for reliability has made us the largest exclusive producer of packaged gas systems for industry. Care in choosing our components has helped build that reputation. We incorporate Jenkins Valves in our systems because our customers know there's nothing better to be had."*  
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MOST TRUSTED TRADEMARK IN THE VALVE WORLD  
**VALVES**



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